

OHIO STATE  
UNIVERSITY  
DEC 9 1931  
LIBRARY

TK1\*  
E 33  
v. 31

# Electrical Contracting

December 1931

*With Which Is Incorporated*  
**The Electragist**

**America's Outstanding Moderately Priced**

ELECTRICALLY WOUND

**TIME-SWITCH**

*is a*

**SANGAMO**

**Outstanding Features of Sangamo Switch:**

- 1** Electrically-wound. Not synchronous, not affected by variations in frequency.
- 2** Ten (10) hours reserve in the event of current interruption.
- 3** 40-ampere capacity.
- 4** Frequent "on" and "off" operations without additional cost.
- 5** Automatic cutout for holiday, Sunday and/or daily operation.
- 6** Manual operation without disturbing sequence.
- 7** Jeweled balance—dust-proof—good time-keeping qualities.
- 8** Clock mechanism enclosed in dust-proof housing.
- 9**  $\frac{1}{2}$ " and  $\frac{3}{4}$ " pry-outs back and bottom of switch case.
- 10** Guaranteed by Sangamo, having sales, service and engineering facilities adequate to care for any requirement.

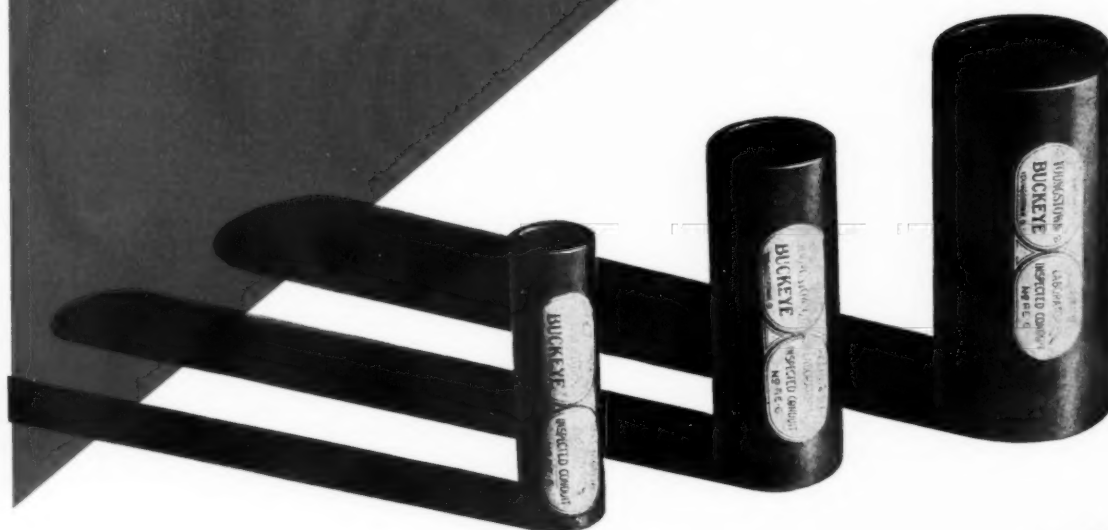
**SANGAMO ELECTRIC COMPANY • SPRINGFIELD, ILLINOIS**

Sangamo Electric Company, Springfield, Illinois, the maker of this switch, is internationally-known as the manufacturer of electrical precision instruments for over 30 years.

# YOUNGSTOWN

## BUCKEYE CONDUIT

*always  
dependable*



THE YOUNGSTOWN SHEET & TUBE CO.  
General Offices  
YOUNGSTOWN, OHIO



# Electrical Contracting

VOLUME 31

With which is incorporated The Electragist

NUMBER 2

## CONTENTS FOR DECEMBER, 1931

John Wise . . . . .	7
Federal Trade Commission Accepts Trade Practice Rules . . . . .	8
How Contractors Are Beating the Depression . . . . .	10
Television Broadcast Wiring . . . . .	12
How to Prepare Accurate Estimates by Ray Ashley . . . . .	13
Avoids Nippling Down on Ceiling Jobs . . . . .	15
Ideas for Christmas Lighting . . . . .	16
Causes of Bad Debt Evil, by John Kuhlmeier . . . . .	18
Editorials . . . . .	20
Code Chats . . . . .	22
A.E.I. Activities . . . . .	25
Contracting News . . . . .	76
Suggested Resale Prices . . . . .	27
Practical Methods . . . . .	86
Manufacturer's News . . . . .	95
Index to Advertisers . . . . .	98

## Resale Price News

Due to manufacturers' new discounts and new prices, several items have been changed in price. Price adjustments have also been made on the following items:

Receptacle plates and plugs  
T-slot receptacles  
Sockets  
Surface snap switches  
Flush tumbler and flush push switches.

Switch boxes and outlet boxes and covers show a slight increase in price, reflecting manufacturers' new discounts.

The price on Type C Trumbull switches has been reduced, reflecting manufacturers' new lists.

Some of the numbers have been changed on Type C, A and 30 amp. Type C, Square D switches, as shown on PL-22.

Published Monthly by

## ELECTRICAL TRADE PUBLISHING COMPANY

HOWARD EHRLICH, President

CHARLES W. FORBRICH, Vice-Pres. EDGAR KOBAK, Sec.-Treas.  
520 NORTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

Entered as second class matter November 14, 1928, at the post office at Chicago, Illinois, under the Act of March 3, 1879. Copyright, 1930, by The Electrical Trade Publishing Company. Yearly subscription: United States, \$2.00; Foreign, \$2.50; Canada, \$3.00, including duty. Single copies, 20 cents.

Member Audit Bureau of Circulations and National Publishers' Association. Also Publishers of *The Jobber's Salesman* and *Mill Supplies*.



S. B. WILLIAMS  
Editor and General Manager

WALTER HOLMES  
Eastern Field Editor

COIT A. SMITH  
Western Field Editor

ADALIN PADWAY  
News Editor

### CHICAGO

William B. Heaps, Manager  
520 North Michigan Avenue  
Whitehall 7900

### NEW YORK

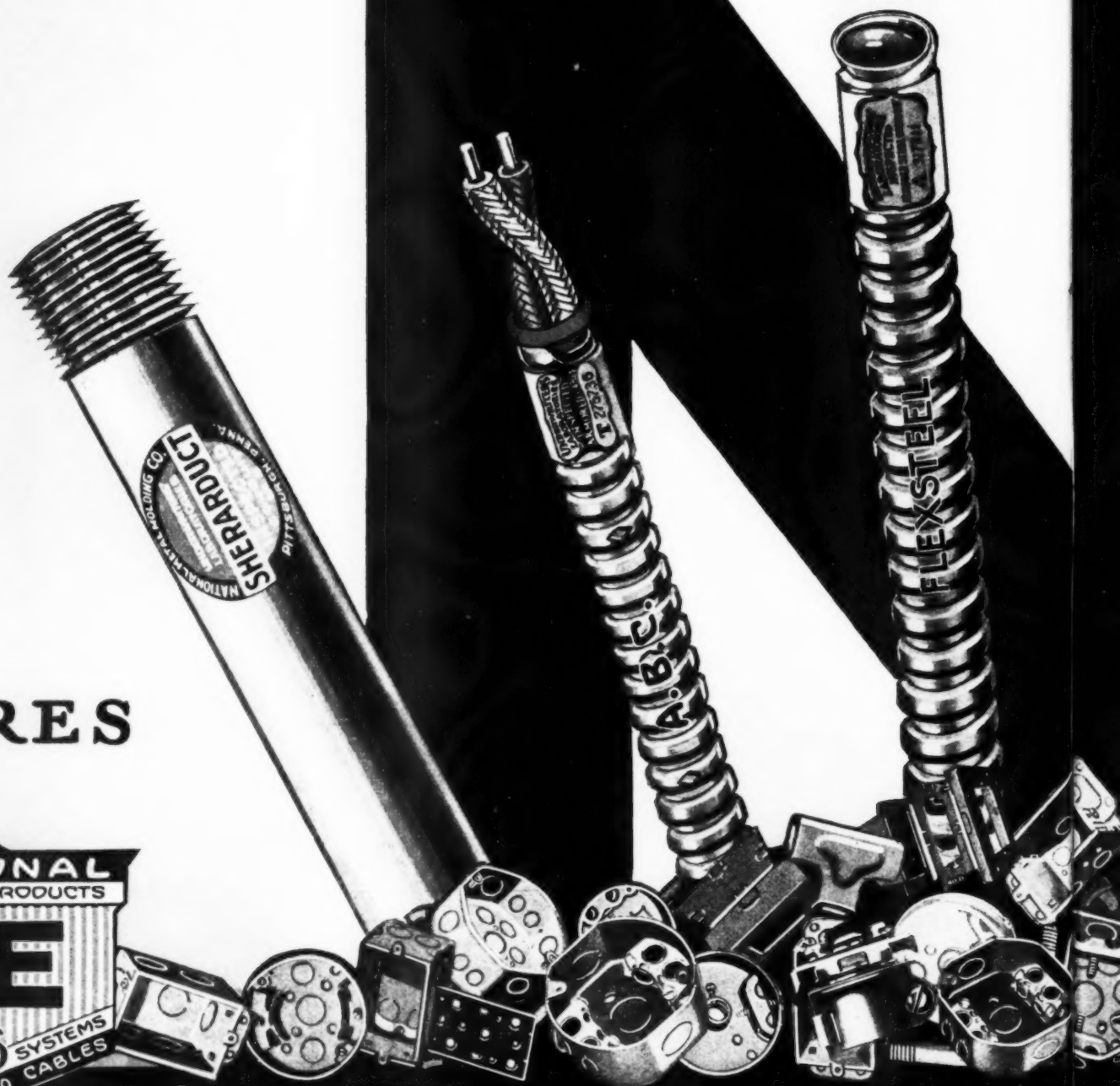
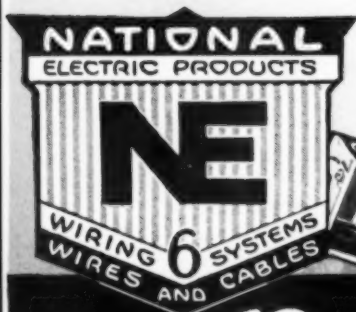
A. R. Carrington, Jr., Manager  
330 W. 42nd St.  
MEd 3-0700

### CLEVELAND

Geo. E. Pomeroy, Manager  
Rockefeller Building  
Cherry 2440

# WIRING SYSTEMS CONCEIVABLE

WIRES



## National Electric Products

National Metal Molding Company

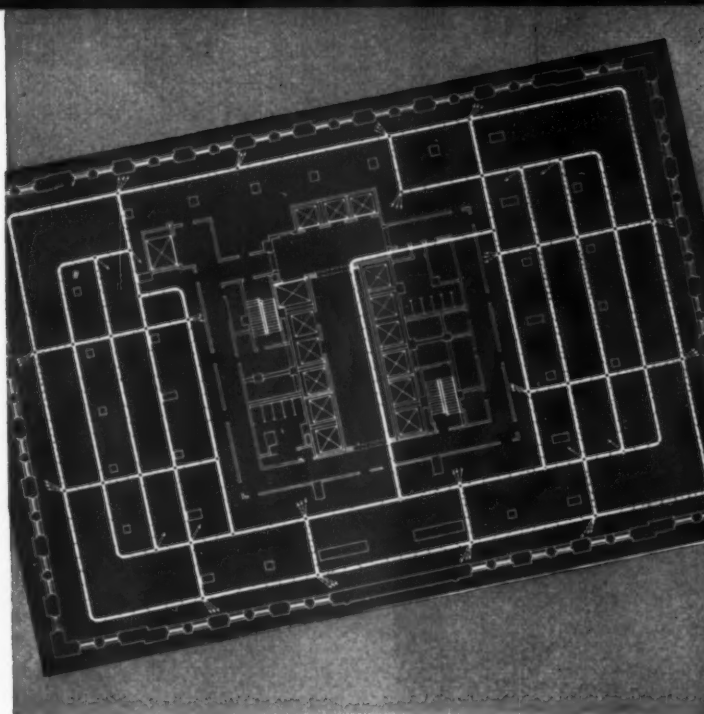
# S and FITTINGS FOR *Every* E REQUIREMENT



Products Corporation  
Division - Pittsburgh, Penna.



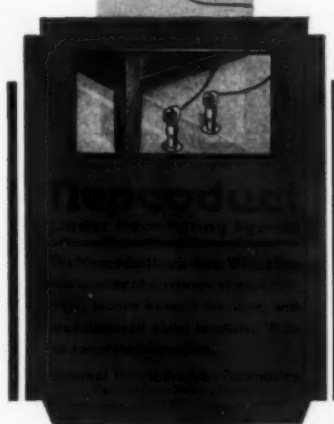
## A network of hidden wireways to meet every outlet need



**H**IDDEN wireways, beneath the floor, carrying wires to practically every point, will meet the electric outlet demands of every building. Today—tomorrow—years hence, outlets can be located as desired,—neatly, quickly and economically.

Whether your building is large or small, you cannot afford to be without underfloor duct. Tenants are demanding it, leading architects and engineers are specifying it.

For maximum wiring flexibility, specify under-floor duct.



# *Specify* UNDERFLOOR DUCT



## Weeding

**F**OR years the industry has been searching for some instrument that would weed out the unfit and incompetent electrical contractors. None, however, have been so effective as the present business depression.

It is not possible to say how many contractors have gone out of business this year. It will be another two or three months before an accurate estimate can be had.

This big loss will come in the large cities where there is less of the personal relationship between the contractor and customer. In the small cities the problem of too many contractors has never been so acute. Because everybody knows everybody else, only reasonably good contractors have ever been able to get along in the smaller communities.

The larger cities, for the most part, require that electrical contractors be licensed and since most of these licenses run for a calendar year, it should be evident by February 1 just how many have left the ranks.

• • •

**A**ND now that there has been a substantial reduction in the number of contractors, what is to be done to prevent a return to our former ways as soon as the electrical construction business begins to improve?

Manufacturers and wholesalers, if they but knew it, are as much concerned in this problem as the contractors. When there are too many contractors, competition brings smaller prices, smaller jobs, greater credit losses. Inadequate wiring can, in large measure, be charged against the conditions that permitted too many contractors.

When business is good high entrance and license fees are no deterrent. There must be some other way of showing fitness than by the ability to pay for a license.

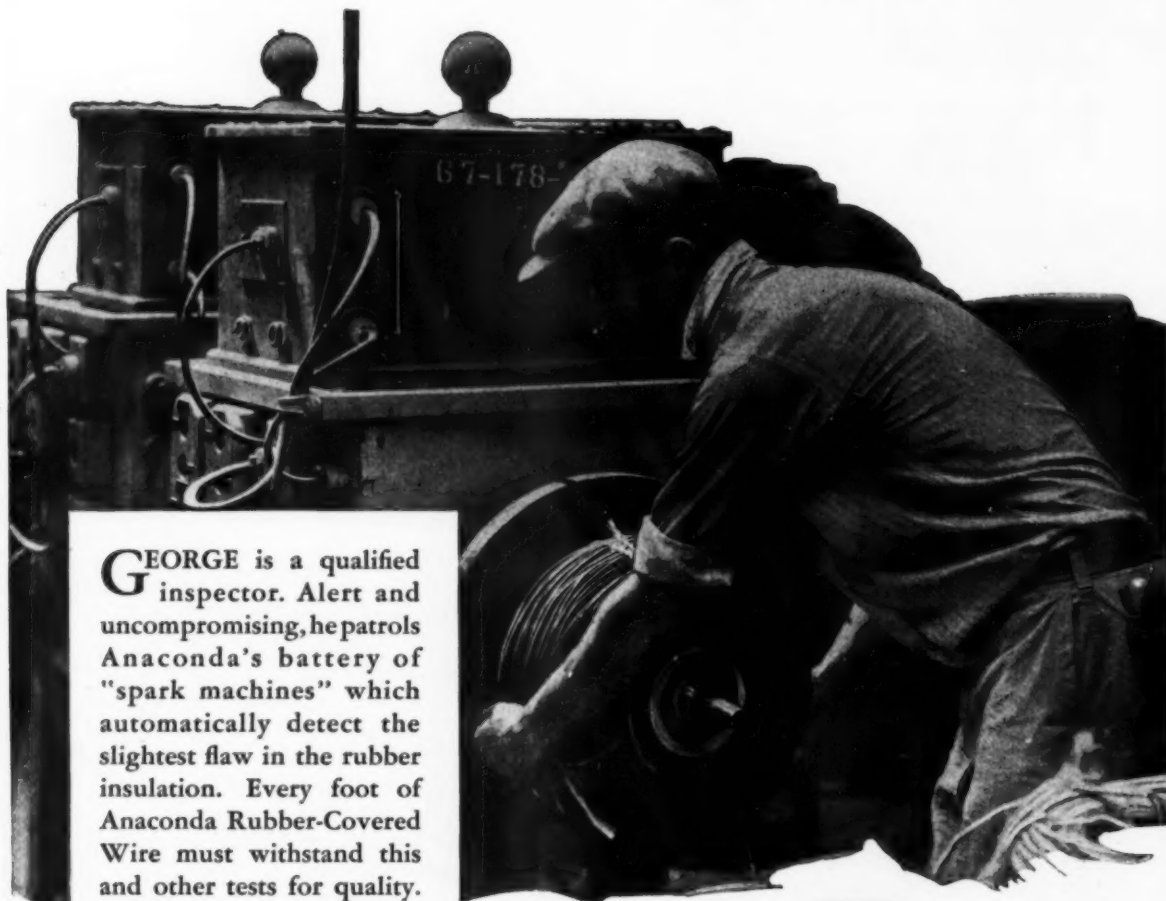
• • •

**T**O be permitted to become a contractor a man should be able to show mechanical and commercial fitness. The first can be demonstrated by a comprehensive examination covering not only the local ordinance and code requirements, but practical knowledge as well. The second is largely in the hands of the suppliers. Before a newcomer should be permitted to have a line of credit he should be required to prove himself—and a year would be none too long. During his period of probation all of his purchases should be for cash.

ELECTRICAL CONTRACTING sees this as a major industry problem, the time to start thinking about which is NOW—a year from now or even six months may be too late.

# Inspector George O'Neil

Guardian of Quality in  
Anaconda Rubber-Covered Wire



**G**EORGE is a qualified inspector. Alert and uncompromising, he patrols Anaconda's battery of "spark machines" which automatically detect the slightest flaw in the rubber insulation. Every foot of Anaconda Rubber-Covered Wire must withstand this and other tests for quality.

George is one of many guardians of quality in Anaconda mills. You profit when we employ men of this calibre... and we profit, too.



**81**

The complete line of 81 Anaconda Wire and Cable products includes these six that you can use every day in your work—

Rubber Covered Wire • ABC Armored Cable • Flexible Steel Conduit • Dura-duct Loom • Durax Sheathed Cable Flexible Cords.

## ANACONDA WIRE & CABLE COMPANY

GENERAL OFFICES: 25 BROADWAY, NEW YORK

CHICAGO OFFICE: 20 NORTH WACKER DRIVE

*Sales Offices in Principal Cities*

# Electrical Contracting

*With which is incorporated The Electragist*

DECEMBER, 1931

## *The John Wise Cure* for CHISELLING

I'VE just been reading about a restaurant owner who had the only place in his immediate vicinity for 10 years, and who had served his customers so well that he had everything sewed up.

Another eating house was opened up three doors on his left by a slicker who had graduated from a lunch-wagon and who started cutting prices right after he landed. This chiseler naturally coaxed some of the business away, and this brought restaurant number three into the picture, four doors on the right of the old timer's place.

Right away Number Two showed his resentment of the third man's arrival by advertising: "All You Can Eat for 60c." This was promptly met by the latter; but the old settler refused to be smoked out—held up his price and quality, watched the corners and improved his service. Nevertheless they began to hurt him considerably, chiefly because hard times were making the customers grasp at any saving.

Still he stood pat, while the other two became desperate, both offering the public: "All You Can Eat for 40c." At this the 10-year man boiled over inside, but he said nothing, just went off fishing for a week and did

some tall thinking. The day after he returned to duty a giant sign appeared above his door with the following astounding legend: "All You Can Eat Absolutely Free!" The sign explained that there was no catch in the offer, that he wanted to give all customers a real break and attract additional prospects.

He did! At 10:45 A. M. a line of World's Series proportions led to his place. Of course there was a catch to it, but it was the fair kind. All he did was to stand inside his door with his cashier, his head waitress and two other girls, each armed with a big bag of dimes, nickels and quarters. To



each guest it was explained that the establishment couldn't handle the crowds, and he or she was then handed 40 cents in cash to go to either of the other restaurants and eat. This wild scheme cost the old timer a lot of dough before it paid off, but it brought him a million dollars worth of advertising. The two chisellers folded up inside of two weeks.

We contractors can profit a lot by letting the price cutter have all the jobs he wants at below cost.

I know and you know that we all have taken jobs where we would have been plenty ahead if we had paid the customer ten, twenty or even fifty dollars to give the work to someone else. So every time I'm asked to take wiring at a loss I'm going to think of this deal, recommend some price cutter for the contract and then *put in the bank the dough I would have lost.*

---

---

# Federal Trade INDUSTRY TRADE

On November 10 the Federal Trade Commission submitted the changes desired by the electrical industry finally been accepted by the electrical industry in the rules adopted by the industry in

---

---

## Official Trade Practice Rules of the Electrical Contracting on November 10, 1931, and subse-

### GROUP I

#### Rule 1.

Wilfully inducing or attempting to induce the breach of existing contracts between competitors and their customers by any false or deceptive means whatsoever, or interfering with or obstructing the performance of any such contractual duties or services by any such means, with the purpose and effect of unduly hampering, injuring, or embarrassing competitors in their businesses, is an unfair trade practice.

#### Rule 2.

Wilfully enticing away the employees of competitors with the purpose and effect of unduly hampering, injuring, or embarrassing competitors in their businesses, is an unfair trade practice.

#### Rule 3.

The defamation of competitors by falsely imputing to them dishonorable conduct, inability to perform contracts, questionable credit standing, or by other false representations, or the false disparagement of the grade or quality of their goods, with the tendency and capacity to mislead or deceive purchasers or prospective purchasers and the tendency to injuriously affect the business of such competitors, is an unfair trade practice.

#### Rule 4.

The selling of goods below cost with the intent and with the effect of injuring a competitor and where the effect may be to substantially lessen competition or tend to create a monopoly or to unreasonably restrain trade, is an unfair trade practice.

#### Rule 5.

The practice of shipping or delivering products which do not conform to the samples submitted or representations made prior to securing the orders, without the consent of the purchasers to such substitutions, and with the effect of deceiving or misleading purchasers and the tendency to injuriously affect the business of competitors, is an unfair trade practice.

#### Rule 6.

The practice of using materials or methods of installation

not in accordance with the applicable Governmental laws, rules and regulations obtaining in the territory affected, with the tendency to injuriously affect the business of competitors, is an unfair trade practice.

#### Rule 7.

The secret payment or allowance of rebates, refunds, commissions, or unearned discounts, whether in the form of money or otherwise, or secretly extending to certain purchasers special services or privileges, not extended to all purchasers under like terms and conditions, with the intent and with the effect of injuring a competitor and where the effect may be to substantially lessen competition, or tend to create a monopoly, or to unreasonably restrain trade, is an unfair trade practice.

#### Rule 8.

For any person, firm, or corporation knowingly to aid or abet another in the use of unfair trade practices is an unfair trade practice.

### GROUP II

#### Rule A.

In electrical installations in territories where no governmental laws, rules or regulations prevail the National Electrical Code, approved by the American Standards Association, provides the proper regulations.

#### Rule B.

The inducing or attempting to induce an architect, owner or builder to reveal to any bidder on a competitive job information relative to bids already received, which information would give the favored bidder an advantage in the preparation of his own bid, is condemned by the industry.

#### Rule C.

To induce or attempt to induce an architect, owner or builder to reveal to a bidder the amounts and conditions of any bid received on a competitive job, with a view of giving the favored concern an opportunity to meet or cut below the lowest bid, whether the favored concern was one of the original bidders or not, is condemned by the industry.

*Electrical Contracting, December, 1931*



# Commission Accepts

---

---

# PRACTICE RULES

Commission accepted practically all of contracting industry in the rules originated August. The new rules which have contracting industry very closely follow March. The rules as accepted follow:

---

---

Industry as approved by the Federal Trade Commission  
quently accepted by the industry.

## **Rule D.**

To mislead or deceive any bidder as to the amounts and conditions of other bids or with any other false information for the purpose of inducing him to cut his own is condemned by the industry.

## **Rule E.**

Surreptitiously obtaining information relative to competitors' bids in the preparation of one's own bid is condemned by the industry.

## **Rule F.**

The industry approves of the "one-bid" policy and condemns fake or fictitious bids made for the purpose of deceiving competitors and securing undue advantage. If plans and specifications are changed and new bids called for after the original bids have been submitted and opened, the same fairness should obtain as with the original bid.

## **Rule G.**

It is a frequent practice for electrical contractors to submit bids to general contractors who in turn use the lowest acceptable price from the several trades in making up their bids on a general contract. Many general contractors after securing the general contract then reopen the bidding for the same operation, commonly known as "shopping," which practice involves deception and misrepresentation lowering the standard and quality of electrical installations and building construction. Such practice is condemned by the industry.

## **Rule H.**

The industry favors the adoption of the following rules for calling for bids:

- (a) In all cases where competitive bids are requested, no one should be invited to bid to whom the contract would not be willingly awarded in case his bid is the most acceptable in itself.
- (b) Where accurate estimates are desired for information only, a reasonable fee or fees should be paid to the parties preparing them.
- (c) Plans and specifications should be sufficiently complete to enable competent bidders to estimate accurately the amount of material and labor required.

- (d) Invited bidders, provided they actually submit bids, should not be required to pay for the use of plans and specifications.

- (e) A reasonable time should be allowed for preparation of estimates.

## **Rule I.**

Where a bidder requests an interpretation of some feature of the specifications from the buyer or his representative before submitting his bid, which would materially affect the cost of the work, the same information should be submitted to all other bidders by the buyer or his representative.

## **Rule J.**

(a) The industry approves the practice of each individual member of the industry independently publishing and circulating to the purchasing trade its own price lists.

(b) The industry approves the practice of making the terms of sale a part of all published price schedules.

## **Rule K.**

The industry hereby records its approval of the definition of a qualified wholesale distributor to be one whose principal business is selling to the retail distributor.

## **Rule L.**

It is the judgment of this industry that an accurate knowledge of costs is indispensable to intelligent and fair competition, and the adoption of accurate methods of cost-finding and estimating is recommended by the industry.

## **Rule M.**

The industry approves the practice of handling disputes in a fair and reasonable manner, coupled with a spirit of moderation and good will, and every effort should be made by the disputants themselves to arrive at an agreement. If unable to do so they should agree, if possible, upon arbitration under some one of the prevailing codes.

## **Rule N.**

A Committee on Trade Practices is hereby created to cooperate with the Federal Trade Commission and to perform such acts as may be proper to put these rules into effect.

# How Contractors are

## WORK THE MAILING LIST HARDER

By P. E. SPRAGUE  
Electrical Supply House  
Portland, Ore.

**W**HEN new construction is down, as at present, do not overlook the mailing list. My brother, G. E. Sprague, and I find that it pays to work the list even harder than usual at this time.

Our list contains 500 to 700 names and they are hand picked, you might say, consisting of all people who have brought repair work to us as well as all wiring prospects with whom we have had direct contact, or are owners of buildings subject to remodeling work, where we have been on the premises and know something of the conditions and what improvements might be made. So "personal" is this list that for the most part the names are annotated with information that the parties have dropped from time to time which lead toward future business.

In the past, it must be confessed, when things were moving fast, the list was circularized only spasmodically. For the past few months, however, we have been cultivating it regularly every 30 days.

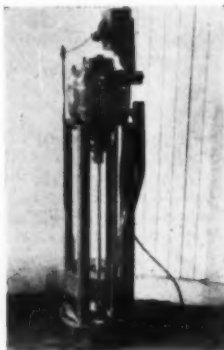
For the most part, we use printed literature, blotters, some special manufacturer's circulars, and the like. We find this is bringing results. Now we are planning on something more elaborate in the way of multigraphed letters.



P. E. Sprague who keeps his hand picked mailing list of nearly 700 names in a ledger book.

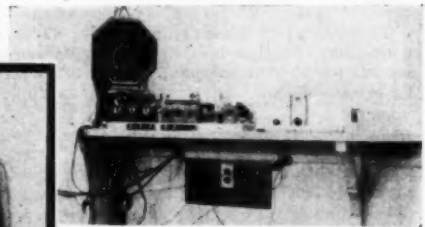
## DEVELOPS CELLAR PUMP

**D**RAINAGE of basements of residences presents a problem which a small automatic sump pump, not too expensive and yet efficient, would go a long way toward solving. The North Bay Electric Works, motor dealers and contractors in San Rafael, Calif., have devised such a pump assembly and make it



up in several sizes. They find a ready market for these automatic pumps in many places where drainage seeps into basements of residences in Marin County.

The one illustrated is more or less a standard model and stands 2 ft. in height. It utilizes  $\frac{1}{4}$ -hp. motor, above which is mounted a motor-starting switch. The switch tumbler is actuated by an arm which is moved up and down by the float below. The float is a copper cylinder with a hole through its center to allow the shaft of the motor to operate the centrifugal pump, which is at the base of the unit. A thrust bearing mounted just under the motor suspends the weight of the motor and the pump below. A framework of angle iron, arc welded in place, acts as a guide for the float. Oil and grease pipes are provided to keep the bearings of the centrifugal pump lubricated. The capacity of this  $\frac{1}{4}$ -hp. motor-driven pump is 10 gal. per minute at a 20-ft. head.



Glenn Willard and the three-stage amplifier in his store.

## SELLS AMPLIFIER SERVICE

**G**LENN WILLARD, contractor and dealer of Albany, Ore., is tiding over the building depression with what bids fair to be a nice piece of permanent business. He was fooling around with an amplifier in his store, when a neighboring merchant wished to know if he could not have one rigged up in his place to announce a forthcoming event which was to be broadcast. On that suggestion hinged a real business, for Willard now has 15 customers along the street who are taking amplifier service from him at \$2.00 a month and more in sight when the football season is on.

He has the amplifier installed in his store in plain sight where customers can see and inspect it. It is a three stager, using three 227 tubes and two 250's in push-pull. It is fed by a National four-tube tuner coupled to it. He has 3000 ft. of duplex wire strung along the street serving his customers, having secured permission of intervening property owners to fasten the wire to their buildings.

At the customer's end he installs a volume control speaker. Willard owns these speakers himself and does not ask the customer to buy. For his programs he gen-

*Electrical Contracting, December, 1931*

# Beating *the* Depression

erally confines himself to one of the chain programs for regular service, but of course all special events such as important ball games, football games, big prize fights, etc., as they come along, are sent out.

This apparently will be permanent business for all his customers are highly pleased and at \$2.00 a month, showing a good profit to Willard, the service is really cheaper for them than it would be for them to install and service their own radios.

## CO-OPERATIVE ADVERTISING CAMPAIGN

W. Bergstrom, one of the proprietors of the Olympia Sport and Electric Shop and J. N. Grim, Proprietor of the G & G Electric Shop. One of the wiring advertisements.

**A** LIVE group in the building trades in Olympia, Wash., are meeting the depression by a very constructive advertising campaign in the *Daily Olympian*. Among those taking an active part are two of the leading electrical contractors and dealers—The G & G Electric Shop, J. N. Grim proprietor, and the Olympia Sport and Electric Shop, W. Bergstrom, H. G. Mace and L. Lassen proprietors.

The movement, under the name of the Olympian Home Improvement Association, was started by Mr. Harmon, manager of the Hyak Lumber Co. Twenty-five or thirty concerns, identified with home building and furnishing interests are in the association, which, according to Mr. Harmon, has money enough pledged to

*Electrical Contracting, December, 1931*

carry the advertising program through from January 26, 1931, when the first ad. appeared, to January 26, 1933.

The advertisements carried by the association of building interests are four column, 12 ins., dominating the page, and are run every Monday night and Tuesday morning. The cost of this joint advertisement is about \$27 a week. On the same page, individuals of the group may use supplementary space as desired. From the reading standpoint, the page is a building page, suitable reading articles being supplied by the advertising agency handling the account. About six times during the year, full page advertising space is used by the group.

Direct benefit to the individuals belonging to the group is hard to trace, but the building page has been the cause of much comment throughout the territory, and especially on the part of the country element who seem to be very much interested in home betterment and come in to make direct inquiry concerning improvement of their homes and costs. Both of the electrical contracting firms feel that their money is well spent.

## BUILDS UP BUSINESS WITH ELECTRIC HOUSE NUMBERS

**I**N these times, when wiring jobs are scarce, the wise contractor looks around for a specialty, large or small, and goes out to sell it intensively, with the idea of making up at least part of his lost volume. On this basis, Clyde Cannaday, Central Electric Co., Memphis, Tenn., elected to develop a lighted house number of his own and sell it throughout his neighborhood. The result of this campaign is the sale of over 200 numbers in three

months. In addition he has received orders from 85 per cent of these buyers for small wiring changes, additions and repairs of appliances, fans, floor lamps and vacuum cleaners.

Cannaday does no house-to-house canvassing. Every customer tells him of one or more friends or relatives who are prospects and these only he calls on.

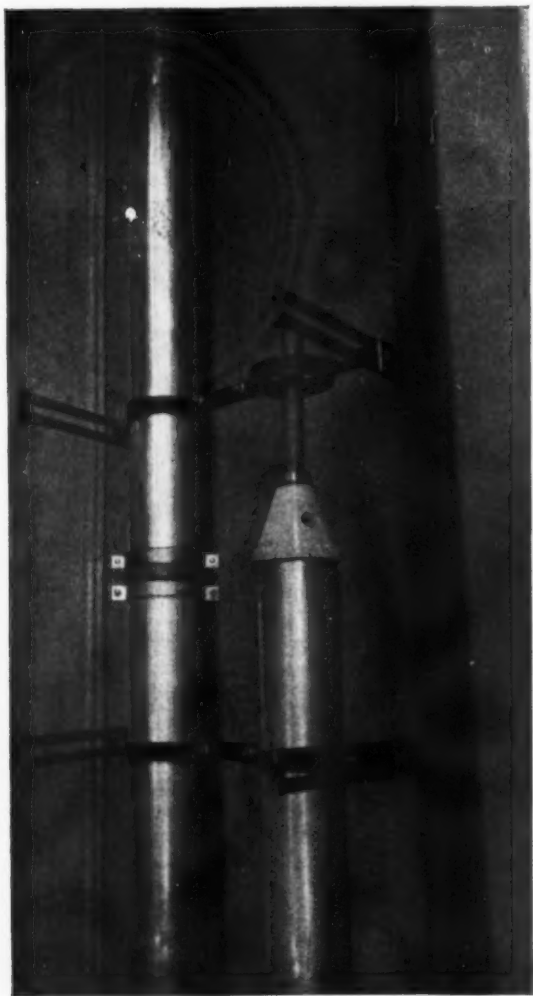
He has a demonstrator outfit which is carried as easily as a brief case. The number can be illuminated before the prospect's eyes.



Clyde Cannaday making a sale with the aid of his demonstrator.



# Television Broadcast WIRING

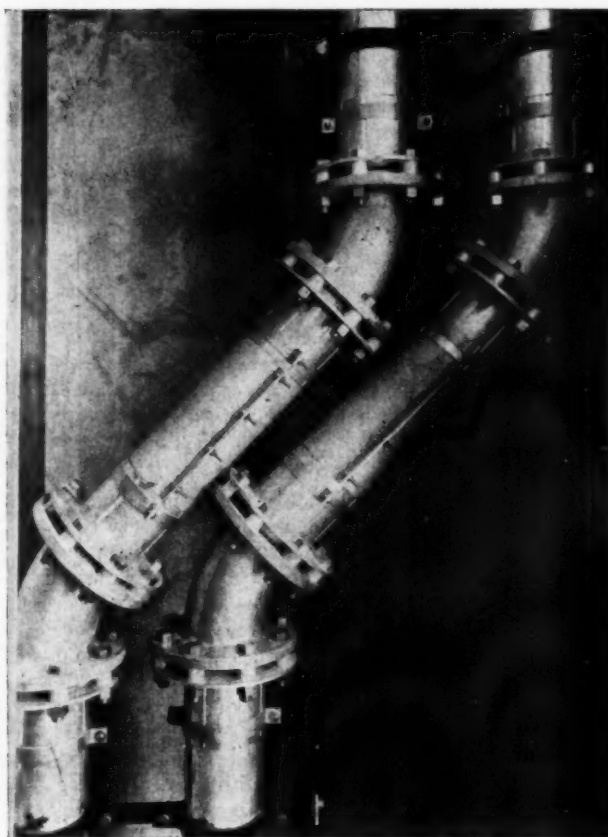


The two transmission lines consist of 5-in. aluminum tubing supported on special adjustable brackets fastened to angle iron supports, which in turn are bolted to the structural steel of the tower. This houses a copper tubing held in place by special insulators which occur approximately at 10 ft. intervals. At the right is the unfinished job, showing insulator and copper tubing ready for coupling the next section. At the left is shown one of the joints with copper mesh locked with clamps around pipe ends.

It was necessary to overcome building conditions by making several turns and offsets. The inner tubing is especially formed to continue through these elbows, and is supported at each end by insulators.

## WIRING

A new class of wiring that will soon be undertaken in considerable quantity is the installation of television broadcasting stations. Below are photographs of the transmission lines installed by the Belmont Electric Co. for the new station on the Empire State Building in New York. The lines run through the dome (104th floor) to the station on the 85th floor.



*Electrical Contracting, December, 1931*



# How to Prepare Accurate Estimates

By RAY ASHLEY

Chief Estimator and  
Engineer, Electrical Survey Bureau,  
Chicago

This, the fifth of a series of articles, deals with estimating for power branch wiring and motor installation. Previous articles told how to take off the lighting.

AS the previous articles have been based on commercial buildings, where lighting is the predominating load, the discussion on power in this article will be confined to a similar type of installation. The amount of power per square foot area for such buildings is low, but the cost per horse power, for installation, is usually much higher than that for manufacturing plants.

There are many factors which affect the cost of such jobs, and a careful study of the plans, and of the types of motors to be installed is necessary. Although the definite location of motors and control equipment is not always given, the conduit and wire installation can be figured fairly accurately. The things that do greatly affect the cost are the types of motors and their location. To say that a 50 hp. motor, together with its starting equipment, is to be installed, means very little to the estimator. The motor may be high speed or low speed, synchronous or induction, constant speed or variable speed; all of which are factors to be considered in establishing labor cost. If the fact that a motor is of the variable speed type, is overlooked, the labor allowed for setting the motor and its control equipment, may be 50 per cent or more, too low.

The location and conditions affecting the handling of equipment must also be reckoned with. Hoisting a motor to the penthouse of a high building takes a great deal more time, than moving one to a first floor position. A study of the plans sometimes discloses the fact that there is no wall space for mounting equipment, and iron frames must be built. Data on motor installation shows a variation of 100 per cent for installation of motors of the same horse-

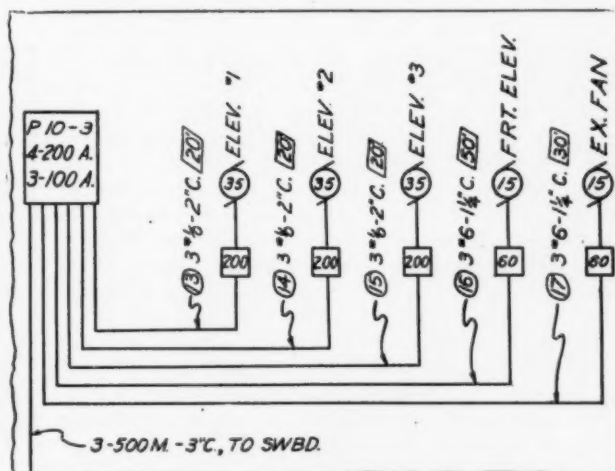
power, due to the difference in type and conditions for installation.

Too much data can not be kept on this branch of the work. It is not enough to check one or two jobs, and then use the results as permanent records for estimating. By following this work closely a contractor learns who his best men for this work are as well as gaining other valuable information.

Installation of power equipment is not a branch of estimating to be handled by an inexperienced estimator. Even men with experience, both as electricians and estimators, are inclined to underestimate this labor. Accurate cost records may show the time spent handling motors, and still not reflect the actual cost. Motors are usually delivered to the job at a time when it is necessary to take men from their regular work, in order to get them off the truck and into the building. It is hard to estimate how much such interruptions really cost.

In addition to having a thorough knowledge of the equipment and conditions for installation, it is necessary to have neat and well arranged "take-off" sheets. The reader will note that in the accompanying illustration, practically all the important quantities are recorded on one "take-off" sheet.

Certain minor items are not recorded on the "take-



Section of Riser Diagram.

Power Schedule. By keeping all of the important items together it is possible to list practically all of them on one sheet.

off" sheet, for it is not well to have the important materials buried in a maze of quantities covering lock-nuts, bushings, couplings, and other minor materials. By having all of the take-off data on one sheet, the possibility of overlooking materials while transferring quantities to the pricing sheets, is minimized. As items are recorded on the pricing sheet they can be checked off on the data sheet. This is another reason for not crowding the estimate. On crowded sheets the quantities checked off do not stand out plainly.

No job with motors and feeders is too small to have a riser diagram, and some kind of "take-off" sheet. Time saved by trying to list material directly on to the pricing sheets, is very costly.

Checking the conduit and wire totals can be done by checking the conduit against the sum of the one-way distances, and the wire should be in proportion to the conduit. The "take-off" form shown here, was designed primarily for feeders, but can be readily adapted to the branch power work, by making slight changes in the headings. The upper part of the right hand section is cut away so that the main headings will not be covered up when the sheet is folded over for filing. It is also ruled on the back to provide additional columns, it needed, for listing quantities.

Although no space has been provided for separating the motors to be set and connected from those to be connected only, one can mark the motors, as they are listed, with an asterisk or check to designate under which class they come. The type of motor may also be designated by some marking.

The pricing sheets are divided in two parts, namely; the wiring materials, and the setting and connecting of the motors and starters. The listing of the conduit, wire, switches and other materials is simple. The listing of the equipment to be set and connected, however, may require careful study. A variable speed motor can not be listed with an induction motor simply because it is

of the same horsepower. Neither can a motor, which is to be set and connected, be listed with one that is to be set only. Equipment must be listed, according to both the horsepower and the labor required for installation.

To avoid using too much space, it is common practice to pay no attention to the location of the motors when listing. In such cases the labor rate is adjusted to fit the average location. In some cases it is advisable to figure all motors on the basis of first floor installation, and set up a separate price for hoisting. The method

used depends on the type of job and the estimator.

Many estimators underrate the necessity of carefully figuring branch power, largely because it is a small part of a large installation. It is, however, just as important to have accurate figures on the small part of a large job, as on the large part of a small job.

Two pricing sheets are used, one for materials and one for motors. This is done because the latter may require considerable study.

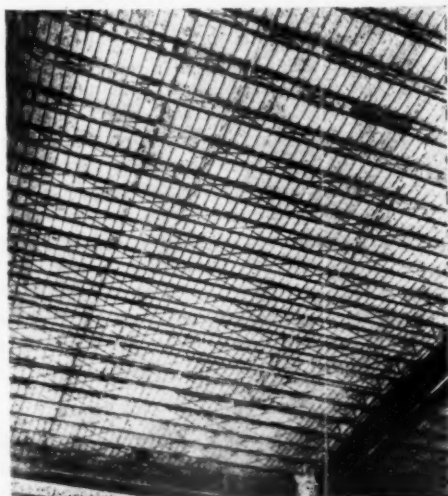


*Meeks-Collins Co., Norfolk, Va.,  
by working just ahead of the  
metal lathers*

## Avoids Nippling Down on Ceiling Jobs

From the blue print the conduit runs on the ceiling are scaled from outlet to outlet and from outlet to panel box.

Pipe is cut, bent, and kept on hand until joists are in.



When joists are in as shown in photo wiremen fasten conduit in position temporarily.

As soon as metal lathers have laid their first lines a wireman and helper follows them, dropping the conduit into permanent position. Lathers in their second operation follow wiremen and cut around outlet boxes as they come to them. Outlet boxes are then in proper position and work of cutting off nipples and fitting outlets to plaster level is avoided.

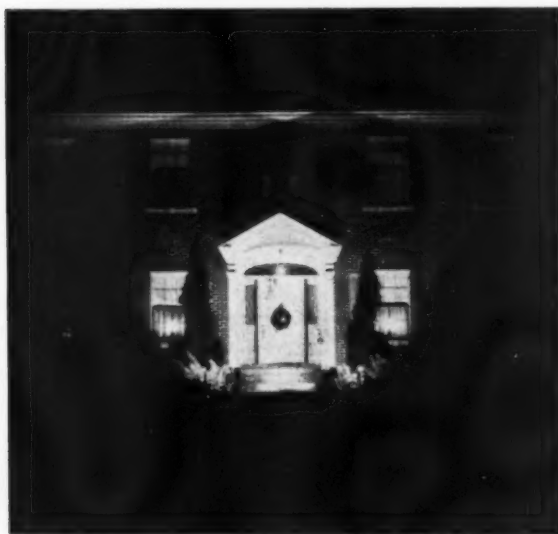






(Right) An example of how the hedge and shrubbery about a large home can be effectively treated with strings of colored lamps. Festooning, with 10-watt S-14 lamps on 12-in. centers, marks the top of the hedge. Weatherproof strings of colored 10-watt S-11 or C-9½ lamps decorate each of the shrubs and trees which line the front of the house. Sometimes the use of one or two colors, green or blue, tends to present a more unified and pleasing decoration, which a wholesale use of colors may destroy. In addition to these two colors, the trees may be enhanced by green light projected from concealed floodlights.

Below is a very simple treatment of the doorway, indicating how the home entrance may be made the center of interest in a more elaborate holiday decorative scheme. Floodlights placed on both sides of this entrance produce the interesting effect. Sometimes it is desirable to use a warm color, such as yellow or amber, for the entrance; in which case it is well to project a flood of green light on to the evergreens which may surround the entrance. Color in the floodlights may be obtained by natural color-glass cover plates or by placing colored gelatin behind the clear cover glass. Some arrangement should be made to keep the gelatin from touching the lamp.



The architecture of many homes presents a basis on which to develop a decorative scheme. At the left, seven lamp weatherproof strings are placed on each of the dormers which lend themselves well to such a treatment. Over the entrance, the same treatment has been applied. The greeting sign balances the rest. Two seven-lamp strings are used to outline the frame of the door and windows. The size of the display is increased by draping lamp strings over the balustrade and shrubbery. Potted evergreens, lighted with colored lamps, provide points of interest at several locations.



## ===== *Ideas* CHRISTMAS

With the introduction of several good low-priced floodlights there should be a marked increase in this form of lighting this holiday season. The illustrations on

### 6 IDEAS FOR UNUSUAL

*Suggested by Society*

- (1) Outline the house in blue lamps; a star in blue lamps anywhere in the center of the house, up high, either on the side or in the front of the house; the trees immediately in front of the house as well as the bushes all around it to be decorated only with red and green lamps. A small 100 watt floodlight projector with red lens lighting up this house, which is decorated in blue, produces a most unusual, beautiful effect.
- (2) Outline the house in red lamps with a star also in red lamps, and the trees and bushes in blue lamps only. A small, 100 watt floodlight projector to be used in lighting up these trees and bushes in a white light. The effect is that the branches are illuminated without interfering with the blue lamps on them.
- (3) In this case, the house itself would not be decorated but would be floodlighted with red and white projectors. The trees in green and yellow

*Electrical Contracting, December, 1931*



Where the home is painted a light color, it becomes a very logical subject for the use of floodlighting. The home at the right has been so treated and with the addition of a holly wreath on the door, presents an inviting picture. Several floodlights were concealed from view in the surrounding shrubbery. The electrical contractor who desires to convince his prospect that his home is a fit subject for floodlighting may do so, by taking a night photograph with the camera set up, the lens open and photoflash lamps flashed in different positions in front of the building.



Left, a suggestion for the medium sized home. Floodlights concealed by the shrubbery light the white walls of the home, and in consequence the shrubbery stands out in an interesting silhouette pattern. In each window of the lower floor and in the windows of the upper story decorative pieces play their part in the general ensemble. Here again the entrance to the home has been given a different treatment, in order to make it a center of interest.

# for LIGHTING

these pages will show the contractor different ways to use floodlights and other forms of decorative lighting for all classes of residences and pocketbooks.

## LIGHTING INSTALLATIONS

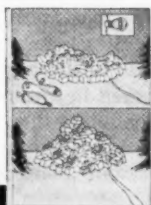
for Electrical Development

lamps, using a ratio of two or three green lamps to every one of the yellow lamps, or else floodlight the house through white and amber lensed projectors with the trees decorated in blue and red lamps, using two blue lamps to every red lamp.

- (4) For indoor trees of fair size, decorate with two strings of blue lamps (16) lamps, one string of red and one string of yellow.
- (5) Another idea for decorating an indoor tree is to illuminate it with red lamps, and drape the branches liberally with pure silver tinsel. The tinsel should be about one inch in width. Addition of small icicles will enhance the effect and at the same time result in somewhat dimming the brightness of the lamps.
- (6) Another most satisfactory way of decorating an indoor tree is to use only green and red lamps, adding tinsel and icicles.

Electrical Contracting, December, 1931

The lighting of ice piles is a unique and picturesque possibility for the home owner who desires to feature a somewhat different type of display. Irregular chunks of ice, piled over guarded 25- or 40-watt colored lamps, produce a beautiful opalescent effect. The lamps should be spaced less than 2 ft. apart and less than 2 ft. from the outside surface of the ice. A flasher button in every other socket will produce motion and color. An insulated rubber ring put onto the lamp base before screwing into socket will keep out the water. Insert shows manner in which lamps are arranged.



# Causes of Bad Debt

---

## The 4th JOHN KUHLMAYER Business Analysis

---

# Evil

JUST as the small contractor claims he has no overhead, the average operator will insist that he has no bad accounts. Even with the best of systems, bad accounts will develop, and the resulting losses must be anticipated in figuring overhead and including it in charges. In the case of contractors who select their accounts, operate efficiently and bear down hard on collecting, a reserve percentage of  $\frac{1}{2}$  to 1 per cent should be sufficient. With the average set-up  $1\frac{1}{2}$  to 2 per cent will safeguard the profits, while in the worst cases as much as 5 per cent is required.

When the small operator reads that he will say: "Why, that's terrible! I can't afford to add any 5 per cent to my overhead for bad accounts; it's too much and, besides, it will make my bids still higher."

Well, if he doesn't add it, it will come out of his already small profits and then where will he be? There is, however, a way out, using the same system as we recommend with any branch of overhead. First, make the reserve adequate according to your accounts, then dig down for the causes and take preventive steps which will boost your collections and automatically cut down the expense of chasing the customers.

If a contractor has bad accounts he makes most of them himself. Practically everything he does before the work is finished can have a good or bad effect on the payment of the bill. From the time when he presents himself to the prospect for consultation until the last lamp is in the socket there is danger of doing or not doing something which will give the debtor an excuse for withholding payment.

MANY will think it silly for me to say that the contractor should always present a prosperous appearance when selling. One of the greatest problems of the man coming up from the tools is to realize that the more hard up he is in reality, the more he should spruce up and act like a real business man. I know that a prospect will take advantage of the man who looks as though he is not prosperous enough to stand up for his rights and they will use this advantage both in making harder terms and in standing him off when he has finished the job.

He should never act hungry for the job by offering a lower price and making a lot of foolish promises he can't keep, but he should be plenty hungry to get his money, telling the customer he has big deals with his banker and, therefore, wants a definite promise of a check. People respect a man who is independent and who insists on a business-like arrangement.

Poor collecting is a major evil and the cause of most bad debts, and the main cause of poor collecting is the

failure of the contractor to secure, before he takes the job, a pledge from the customer to pay at a definite time. In addition, after the job is finished he is notoriously unwilling to ask for his money; he allows himself to be put off too easily, and the first thing you know, he has a bad account and the customer has a bad habit.

As we all know, too much time is spent in collecting. The contractor's personal time on the average job should be divided as follows:

Selling .....	80%
Supervising .....	10%
Collecting .....	10%

This arrangement allows him time to sell a better and more profitable job by outlining the entire layout to the customer and having all details thoroughly understood. Unfortunately, in many cases we find a reversal of this time division, where 80 per cent of the time is spent in collecting.

For instance, a contractor goes after a \$300 job. In his anxiety to get it away from his competitors, and because he is fearful of scaring the prospect, he studiously avoids any reference to terms and makes no attempt to sell a more complete installation. He gets the contract and congratulates himself on spending only  $1\frac{1}{2}$  hours selling and estimating the work. He devotes another hour and a half to supervising and the job is finished; then the fun begins.

His bill is sent out and the days pass with no remittance from the customer. Finally the contractor calls and requests payment. The customer, having been made a first-class chiseler by the lax methods of those who serve him, puts up an argument and finally promises payment "next Saturday." To make a long story short, the contractor makes half a dozen calls and uses up the staggering total of 12 hours' time in getting his money. His time being worth \$3.00 per hour, he has spent more than his actual net profit just in collecting.

Of course, he has not intended to waste all that time, and the only remedy is for him to see in black and white the loss he has sustained. By persuading contractors to make out a daily time ticket, the same as their men do, I have been able to bring home to many the importance of conserving time and considering themselves employees of the firm. After the time tickets have been faithfully filled out for a month the contractor finds himself face to face with some very embarrassing but valuable facts about his own activities and, always, he will find that startling and unnecessary amount of time used in collecting.

Because of conditions like these I say without hesitation that the time to worry about the money is before

the job, not afterwards. The contractor's thoughts should run something like this: "When I take this \$300 job I must take \$270 of my own money and expose it to all kinds of risks in order to net 10 per cent or \$30. I am not going to bet nine to one and then wait till the stakeholder is good and ready to hand me the money which rightfully belongs to me the minute the job is finished, so I don't give a rap about getting the work unless a definite agreement to pay goes with it."

Although the settling of terms in advance is the key-stone in building a perfect transaction, it will not support the structure alone but must be backed up by other sturdy units of action. In other words, it is useless to tie up the customer with an iron-clad agreement to pay as soon as the job is completed (or sooner) and then let everything else slide. He is certainly not obligated to keep his promise of payment if he is misled as to final cost, if the job is delayed unnecessarily, if the work is sloppy or the installation unsatisfactory.

**W**E will give the contractor the benefit of the doubt and assume that he uses good material, employs efficient workmen, finishes jobs on time and guarantees them, but in most cases he does not take the time to do a real selling job and give the customer full information as to just what he may expect and why the job costs so much. Consequently, he leaves the customer several loopholes to bring up arguments after the work is done.

First in importance is to tell the prospect all the bad news about the cost of labor and extras. My slogan is: "Do all your fighting and arguing beforehand—then all is understood and the sailing is smooth." Put yourself in the customer's place. You break a spring on your car and ask the garage man what it will cost. He replies carelessly that a spring costs eight bucks. You go back the next day and the bill has gone balloon to the tune of \$28. Naturally, you raise a holler and the man has to hold you while he explains that the difference between \$8 and \$28 is labor.

The next day you are called to estimate a power job. The customer knows you and doesn't hold you down to cases, so you only tell him part of it; you don't say what

a job it is to set the motors and what it costs for other labor items—just give him a few "abouts" and "approximatelys." Then when he receives a bill of \$300 he acts just like you did in the garage. You know then that you would be better off not taking a job if you are afraid to explain the whole cost in the first place. When the contractor avoids telling his client the whole truth about terms and cost he not only lets himself in for a lot of embarrassment, but invites the loss of part of his profits through extra work in collecting.

Time and material work is highly regarded by most contractors and I do not criticize this form of transaction if it is sensibly carried out. However, it really is the source of grief in many cases by making a long-drawn argument out of a legitimate charge. Suppose a man takes on a T and M job which drags along for some time. Neither the contractor nor the customer knows what the final cost will be and, regardless of the customer's confidence in the wiring firm, when the bill for several hundred dollars is presented there is an argument. Itemized bills are demanded and the contractor is lucky if he doesn't have to make an adjustment.

In my opinion, the ideal transaction in a good sized contract is an iron-clad agreement for weekly billing and payment. Here, again, the ultimate cost is not known, but with weekly billing the contractor is in a better position to know his costs and satisfy the customer on each step in the job. But the real beauty of this arrangement is that when the job is finished the only possible argument is on the last week's bill.

The chances for bad accounts are naturally greater with the small contractor, for various reasons. If he doesn't keep books or if his records are incomplete, he doesn't know what is going on in his own business. He is not usually able to be independent and enforce his demand for payment. Also, he caters to a less substantial class of trade than the medium or large operator who deals with builders, architects, industrials and merchants.

Small or large, the contractor should remember day and night that his greatest duty to himself, his business and his family is to collect an adequate amount of money for his work and collect it promptly.

## *and* 6 Ways to Cure It

1. Secure the best credit information possible, both from regular sources and personal inquiry.

2. Select and concentrate on accounts which are financially sound and noted for willingness to pay promptly.

3. Set the date of payment as early as possible and secure the customer's promise to settle at that time.

4. Explain the whole cost of the job instead of avoiding it. Show why the charge is fair and leave the customer no loophole for argument about the bill from the standpoint of finance.

5. See that the job is done so as to leave no room for complaint by the customer as to delay, wrong material, sloppy work or unsatisfactory operation.

6. Keep accurate records and send out bills promptly. Avoid itemized statements whenever possible.



---

# Electrical Contracting

---

*With which is incorporated The Electragist*

---

S. B. WILLIAMS, Editor

---

## One 1931 Improvement

**I**N spite of the fact that business generally, and particularly new construction, is down, Red Seal wiring permits in many places appear to be gaining both in number and in the percentage of homes built.

Of course, the houses being built today are, for the most part, non-speculative and of the better class. This is an easier market to sell. Nevertheless, it is an interesting commentary on whether or not wiring can be sold, to find Red Seal wiring forging ahead during the worst period the electrical industry has ever experienced.

---

## Now for Enforcement

**T**HE electrical contracting industry has finally been successful in securing from the Federal Trade Commission a set of Trade Practice Rules which meet the industry's problems. The rules originally adopted by the industry at its Kansas City hearing in March were apparently ignored by the Commission when it submitted its first draft in August, because that draft had no pertinent connection with the industry's problems. It was for that reason that the draft was returned to the Commission with a request for reconsideration.

In the meantime the Commission had had its ears to the ground and the sentiment of business generally was that if the Commission could not give to an industry rules to take care of that industry's particular problems, then why have any rules?

Early in November the Commission submitted a new set of rules—rules which very closely resembled those originally approved by the industry. The committee, of which L. K. Comstock was chairman, is to be congratulated for its successful achievement.

The important rules to any industry are,

of course, the Group II rules. In Group I are rules which call for the police power of the Commission. In Group II are the rules which call for the police power of the industry.

How is the industry going to set up this police power? We now have the rules, how are we going to enforce them?

By securing the rules we have not won the race—in fact, we have only just come up to the starting line. If the rules were worthwhile getting, they should be worthwhile enforcing.

It is, therefore, essential that national and local associations study these rules and learn how to make them effective.

---

## Excerpts

**F**OLLOWING are excerpts from remarks by H. S. Bennion, director, engineering department, N.E.L.A., as taken from the record published in the November, 1931, N.E.L.A. Bulletin under the heading "The Rewiring Problem":

"Were it not for the free use of lengths of lamp cord and the use of five and ten-cent store fittings, the sales of electric current would be far below their present levels. . . . The average customer has shown a decided tendency to limit his expenditures for additional wiring to an occasional outlay of a dollar or two. . . . It is apparent how important is the development of wiring methods and materials . . . at costs far below the present. . . . We would do well to direct our attention first toward improving the rewiring method he is already using . . . which consists of lamp cord tacked along the baseboards, along picture moldings, around the windows or door frames, or in the corners of walls. . . . The lamp cord wiring scheme gets the electric current to points of use. . . . One can learn much from telephone wiring in houses. . . . The telephone installer appears to have little hesitancy about puncturing interior walls to shorten the path to his objective. . . . Types of surface wiring have recently been introduced and efforts are being made to have one of these recognized in the National Electrical Code. . . . This failed at the last meeting of the committee, but further efforts will no doubt be made. . . . If surface wiring is to be satisfactory to millions of householders, it must not only be approximately as cheap as lamp cord and call for simple fittings . . . but some of the circuits must have large capacity. The use of concentric or bare neutral wire will be important to this wiring scheme. . . . When householders everywhere can buy in convenient and attractive form concentric or bare neutral, or fully insulated wiring and fittings, at about the price of lamp cord and its fittings, . . . the rewiring problem will disappear. . . . There should be no opposition from the manufacturer, the wiring contractor or the electrical worker to this proposal. . . . This proposal will take nothing from the electrical worker. . . . If the National Electrical Code and city ordinances are modified to permit the use of the proposed wiring, the electrical worker can then engage in this form of wiring in competition with the householder. His more slightly and reliable workmanship would be a strong inducement to the householder to pay several dollars to procure skilled services instead of applying lamp cord wiring himself. . . . The underwriters and others interested in home safety should have no fear of a program for developing interior wiring along the lines which I have outlined. . . . There is, of course, great need for further effort toward improving the more expensive types of wiring. . . . There has never been any conscious engineering design expended on interior wiring systems since the days when the earliest installations were effected. . . . The rewiring obstacle is



at present . . . the most serious bar to progress in the reduction of the price of electricity to the domestic consumer."

The cooler heads among the electrical contractors say that they do not believe the above statements represent the point of view of power company executives as a whole. Maybe not. We, too, used to feel when similar statements were made that they represented the viewpoint of only a few power people.

But we can no longer guess!

Let every contractor, and every association of contractors, take these excerpts to the head of the local power company and ask if these are the sentiments of his company. If these are the sentiments of the majority of the power industry it is best that we know, so we may be able to oppose them effectively.

On the other hand, if the contrary be true, then it is time that the N.E.L.A. staff be instructed to stop making such embarrassing utterances.

#### Nothing to Lose

**H**OW are electrical contractors meeting the depression? Our field men have been studying this matter for some weeks and have run into some interesting answers.

There are apparently three ways in which contractors are meeting present business conditions. Many contractors are merely closing their doors until further notice. In other words, they are hibernating. What money they have they are using to live on, if they have no other work.

A large group of worth-while contractors, wishing to stay in business, are pulling in their belts. They have reduced their organizations to the minimum and where further economies were necessary have moved from the high rent district further out, or even to their homes.

A smaller group have refused to be licked—they are out drumming up business. Where the normal type of business has failed them, they have turned to some other phase of wiring. On another page will be found reports on some of these contractors.

We compliment these contractors who have economized in every direction in order to keep their doors open, but there is a limit to which economy can go. Economies do not bring in business and what we need today, now that we have trimmed away most of our extravagances, is business, and the only way to get business today is to go out after it.

For that reason, we commend to the attention of the industry—the fighting group—the fellows who are out selling. Don't say that they are different, or that conditions in their towns are different. That's an admission of weakness.

No part of the country has been harder hit than the Dakotas. Last summer the grasshoppers ate every green thing in the two States. But when the Dakota farmers were sold farm wiring this fall they paid for it—in cash.

The public still has money to buy things that are properly sold. The thing most contractors have most of is idle time. Use the time for selling—there is nothing to lose and in all probability something to gain.

#### Restraint of Trade

**W**HEN a contractor deliberately sets out to wreck a market by unmeetable prices, the chances are dollars to doughnuts that he will begin pyramiding and some jobbers will soon find themselves in the contracting business. Under such circumstances it is reasonable and proper for the associated contractors to inform their suppliers of the danger of this price cutter. Then if these suppliers wish to continue to sell this price cutter on open accounts, the associated contractors are justified in taking their business elsewhere.

This is not restraint of trade, it is merely a declaration on the part of the associated group that they do not care to buy from suppliers with such a credit policy.

On the other hand, a threat by an association of withdrawal of business of its members from all suppliers who continue to sell a contractor who is not a member of the association, or who does not subscribe to its policies on labor, estimating, mark-up, etc., is distinctly restraint of trade.

No matter how bad an actor the non-member is, the public will be on his side and the associated contractors will be accused of conducting a racket. This year has seen the associated contractors in a number of places hauled upon the carpet and spanked for unduly restraining free competition.

We are firm believers in strong associations but we cannot condone the use of strong arm methods to induce membership. Moreover, it has been our experience that associations built and conducted on that basis have seldom been successful for long.

# Code Chats

*A Monthly Discussion of Wiring Practice and Questions of Interpretation, Presented with a View Toward Encouraging a Better Understanding of the National Electrical Code - - -*

Conducted by F. N. M. SQUIRES

*Assistant Chief Inspector, N. Y. Board of Fire Underwriters*

## Grounding the New Service Cable

When the new multiple conductor entrance cable is used, permitted under Rules 403 c and e of the new 1931 Code, particular care must be exercised to make sure that the armor is properly cleaned at the ends of the cable so that effective electrical connection will be secured between the armor and the cable fittings used. After removing the outer braiding covering the armor it would be well to use a cleaning fluid such as gasoline or carbona to clean off the saturant with which the braid is filled. Otherwise a good electrical connection and grounding of the armor may not be effective.

## Size of Service Switch

New rule 405 (d) requires that service switches have a rating not less than that of the cutout base or circuit breaker used in series with them as was required in the same rule of the previous Code, but the second sentence of this paragraph is new. This is to the effect that where more than two circuits are required on an installation under the provisions of Section 807 of the Code and a 2-wire service is used, a switch larger than one of 30 amp. capacity shall be used. It should be noted that the larger than 30 amp. switch is required only where more than two branch circuits are required by 807. If the conditions of an installation are such that under the rules of 807 two circuits are not required, then the use of the larger switch would not be mandatory even though more than two circuits were installed.

For instance, a residence of two floors covering 25 by 30 ft. might be wired for four circuits, each circuit having a load of not over 5 amp. While the new Code would allow this residence to be wired with the use of but two circuits, the electrical contractor gives his customer a better job and puts in four circuits for which he need not be penalized by having to use a switch larger than one of 30 amp. rating as his total load is only 20 amp.

However, it is strongly recommended that a larger switch be installed so that when the owner desires to use more appliances and to in-

crease the number of receptacles he will not have to provide additional capacity in his service.

## Threadless Couplings on Service Conduit

Rule 404 (d) of the 1930 Code required that where rigid conduit was used on service work it should have weatherproof threaded joints.

Rule 404 (g) of the 1931 Code says, "Where rigid conduit is used, all conduit joints shall be made weatherproof in an approved manner." This permits the use of threadless fittings provided they are of the type which makes the joint weatherproof; and "weatherproof" means—so constructed that weather will not interfere with its successful operation.

Several manufacturers are now ready to supply the weatherproof threadless couplings.

## Circuit Breakers and Fuses in Service Work

Rule 405 (a) (1931 Code) says that on service work where a fuse is called for a circuit breaker approved for the purpose may be used and wherever a switch or switch and fuses are called for, a manually operable circuit breaker may be used, and where circuit breakers are used there shall be an over-current unit (trip coil) in each ungrounded conductor.

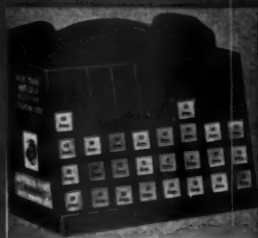
The above permits the use of circuit breakers for fuses or switches but the reverse does not always hold. In some instances where circuit breakers are called for they cannot be replaced by switches and fuses.

*Electrical Contracting, December, 1931*



**NEW CODE FOR SOUTH BEND:** A new code regulating the installation of electrical equipment and the sale of electrical supplies and appliances in South Bend, Ind., has recently been published. Fred Champaigne, chief electrical inspector, believes the constructive assistance rendered by the local electrical contractors' association has been very helpful in bringing about the adoption and immediate publication of the code.

# Make Sure They Remember . . To Buy "Fuses for the Home"



Back view of the New Jefferson Display Container. Stock is neatly stacked in the most convenient place for quick, cheap care of trade.



Note the Insulator Top of black porcelain for safety — the large, clear-mica window, which with specially formed element and black top shows at a glance the condition of the fuse.



**B**ECAUSE people need fuses but seldom, they *never* remember to buy . . . until too late.

Put this "salesman" to work drumming in the story to which there is no argument: "Some Night You'll Need Fuses."

The display not only sells fuses. It saves work, being an easy-to-reach counter rack for your stock of improved Jefferson "Fuses for the home".

The new Insulator Top of the improved Jefferson is of porcelain — one of the best non-conductors known. You can convince women customers that the Jefferson is safe to change.

There can be no mistake as to which Jefferson Fuse is blown. The specially formed element shows up against the black top through the large, clear-mica window.

Stock Jefferson in assortments. They include the capacities you will need, each in the quantity experience shows is correct. P-1 Assortment of 100 fuses with Display, \$3.25 net. P-2 Assortment, 200 fuses with Display, \$6.25 net. Wholesalers have them.

## JEFFERSON ELECTRIC COMPANY

1503 West 15th St.

CHICAGO, ILL.

# JEFFERSON

## FUSES FOR THE HOME





New rule 405 (b)-2, is one instance of this, for here the use of circuit breakers is mandatory if advantage is to be taken of the permission to omit the main service switch.

### More Wire to Be Left at Outlets

Rule 503 (h) (1931) demands that at least 6 in. of free conductor be left at each outlet except where conductors are intended to loop without splice through sockets, receptacles or similar devices.

This will probably help protect the fixture man against the rigid economy of a Scotch wireman and will tend to prevent the necessity of stretching the conductors.

### One Ground Only

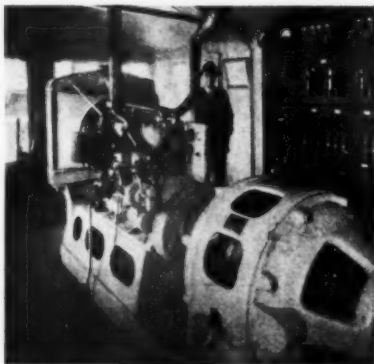
*I wired a farm house and a barn for lights using armored cable inside and No. 8 weatherproof wire running from the house to the barn, a distance of 450 ft.*

*In the house there is a 2-circuit panel located in the hallway on the second floor. At this panel taps were taken off the feeder to supply the barn circuit. There are no fuses at this panel for the barn circuit.*

*At the barn there is a Square D service switch and fuses protecting the barn circuit. The neutral of the barn circuit is grounded at the barn. Having a long run of wire between the house and barn I think the neutral should be grounded for lightning protection. Am I right or am I wrong for grounding the neutral at the barn?*

*The power company connected this house and set the meter, after which I found the meter running without any lights on. Upon investigating I found connections at the meter on the load side reversed; the black wire being connected where the white wire should be. Upon correcting this the meter stopped running. The power company claimed that if I had not grounded the neutral at the barn the meter would have been O.K. The conduit and the neutral were grounded at the service switch.*

Rule 405(k) says that the wires running between the house and the barn are not to be considered as service conductors so that service fuses will not be required at the barn. Under the same rule, however, the wires between the house and barn must be controlled by a switch located either at the point of entrance of the wires to the barn or somewhere back on the line. This latter point may be where the wires leave the house or where the circuit is taken off of the feed. These wires, however, should be rubber covered to comply with 501(c), for out of doors is considered a damp location. Evidently No. 8 wire has been used to



**MAKE OUTSTANDING POWER INSTALLATION:**—Almon R. Johnson of the Benson Electric Co., Superior, Wis., is seen inspecting the power service installation made by his company for the Arrow Head Bridge between Superior and Duluth, Minn. The current supply is power from the shore and is 3-phase, 440-volt. Switchboard and controls were built by the company.

avoid drop in voltage due to the long run and also to provide mechanical strength and this is to be recommended.

If the equipment in the barn is all on one circuit, the circuit may be fused in the panel in the house and no further fuses would be required in the barn.

As for grounding, Rule 903(e) specifies that the neutral of the interior wiring system shall be grounded at one point only. Therefore the neutral should not be grounded at the barn.

If protection against lightning is desired for the aerial wires between the house and barn, better protection would probably be obtained by running a separate grounded wire—bare or otherwise—just above (say a foot or so) the circuit conductors. This separate wire would not be connected to the grounded neutral but would be grounded at one or both ends.

In our correspondent's letter he explained that, with the reversed connections, which resulted in one white wire and one black wire being grounded, the meter was found running. This fact proves that the grounds were electrically ineffective for had the grounding connections been effectual the service or circuit fuse would have blown. Then the meter would not have been found running. The proper place for the grounding in this case is at the service switch in the house but this grounding connection should be made both effectual and efficient.



**SHADED LIGHT WINDOW DISPLAY ON 28-WEEK TOUR.**—The home lighting committee of the Pacific Coast Electrical Bureau has offered to southern California contractor-dealers, a shaded light window display to be shown for one week in each of the 28 stores on schedule, the first being the Newbery Electric Corp., Los Angeles. Shaded and unshaded fixtures, shown for type, are pictured on the 4 and 6 ft. beaver-board and wood background. A model residential floor plan, showing lighting and convenience outlets, is a part of the background and display cards on the floor of the display window help tell the story. Each contractor-dealer showing the display has available for distribution Red Seal wiring plans.



# A. E. I.

## NEWS and SERVICE INFORMATION

Material for this department is supplied by the headquarters staff of the Association of Electragists, International, 420 Lexington Avenue, New York, N.Y.

President, L. E. MAYER 14 North Franklin Street, Chicago, Illinois Vice President, EARL N. PEAK 1603 West Main Street, Marshalltown, Iowa

### DIVISIONAL EXECUTIVE COMMITTEEMEN

<b>Eastern</b> LOUIS KALISCHER 288 Livingston St. Brooklyn, N. Y.	<b>Great Lakes</b> E. D. BROWN 2470 Grand River Ave., Detroit, Mich.	<b>Pacific</b> F. O. SIEVERS 468 5th St. San Francisco, Cal.	<b>At Large</b> L. K. COMSTOCK 16 East 52nd St. New York City
<b>Southern</b> D. B. CLAYTON 844 Martin Bldg. Birmingham, Ala.	<b>Central</b> E. T. LANGFORD 511 S. Third St. Minneapolis, Minn.	<b>Eastern Canadian</b> R. A. L. GRAY 85 York Street Toronto, Ont.	<b>J. A. FOWLER</b> 118 Monroe Ave. Memphis, Tenn.
<b>Southeastern</b> W. W. INGALLS 315 S.W. 10th Ave. Miami, Florida	<b>Mountain</b> R. R. REID 1957 South 5th East Salt Lake City, U.	<b>Western Canadian</b> J. H. SCHUMACHER 344 Main Street Winnipeg, Man.	<b>General Manager</b> LAURENCE W. DAVIS 420 Lexington Ave. New York City

### Committee Appointments

President Mayer announces the appointment of the following chairmen of Committees of the Association of Electragists, International, for 1931-1932:

#### TRADE POLICY

J. A. FOWLER, *Chairman*

Committee contacts with manufacturers, wholesalers and central stations in matters of trade policies affecting the interests of electragists. Studies unsatisfactory conditions and proposes remedial measures. Has made important surveys of channels of distribution. Seeks to promote the A. E. I. trade policy, that distribution should be from manufacturer through wholesaler, through contractor and dealer to consumer. Is working to obtain adequate margins on appliances and equipment.

#### STANDARDIZATION AND WIRING METHODS

LOUIS KALISCHER, *Chairman*

Committee seeks increased efficiency and economies in wiring practice. Seeks to reduce excess number of wiring methods. Contacts with manufacturers to develop standardization of materials. Contacts with wholesalers to encourage selling in standard packages.

#### ELECTRAGIST STANDARDS

J. H. SCHUMACHER, *Chairman*

Committee responsible for development of "Electragist Standards for Wiring Installations," providing an authoritative guide to best practice in

wiring. Includes definition of types of wiring suitable to use under various conditions, general requirements for safety and efficiency, specifications for materials and apparatus, and for methods of installing same, and the engineering design of installations.

#### NATIONAL ELECTRICAL CODE

EARL N. PEAK, *Chairman*

Committee provides for A. E. I. membership (2 members and 2 alternates) on Electrical Committee, N. F. P. A., in revision and development of National Electrical Code, and on article committees of Electrical Committee. Represents A. E. I. on American Standards Association in approving National Electrical Code as an American standard.

#### COST DATA

D. B. CLAYTON, *Chairman*

Committee developed and published the Electragists' Estimating Manual, which covers labor costs on various classes of installations. Estimating Manual supplied to all members of A. E. I. Developed and supplies to membership estimating forms, proposal blanks, job record forms, etc. Supervises annual compilation and distribution of wage rates and inspection data.

#### ARCHITECTS AND ENGINEERS

E. D. BROWN, *Chairman*

Committee reviews current Standard Documents of AIA. Represents A.E.I. on American Standards Association sectional committees.

#### LEGISLATION

W. W. INGALLS, *Chairman*

Committee compiles and studies various legislative measures proposed or enacted in municipalities and States, as referred to the committee by A. E. I. chapters or members. Has promoted the adoption of uniform State Arbitration Act. Has prepared draft form of local licensing ordinance.

#### CENTRAL STATION RELATIONS

EARL N. PEAK, *Chairman*

Committee handles matters referred to it covering merchandising practices of central stations, and seeks to improve industry relations through direct contact with central stations or through the N.E.L.A. Mr. Peak is contractors' representative on N.E.L.A. executive committee.

#### CREDIT AND ACCOUNTING

R. R. REID, *Chairman*

Committee promotes the Electragist Standard Accounting System, of which over 1200 systems are in use. Compiles annually the "cost of doing

(Continued to page 75)

### New Members

The following applicants have been accepted into the A. E. I. since the publication of the list in the October issue:

<b>ARKANSAS</b> Little Rock: Arkansas Electric Co.	<b>INDIANA</b> Hammond: Hammond Electric Co.	<b>Kingston:</b> Walter May
<b>CALIFORNIA</b> Oakland: Paramount Electric Co. Spott Electrical Co. George Woolf	<b>NEBRASKA</b> Omaha: Acme Electric Co. James Corr Elec. Co.	<b>Newburgh:</b> H. I. Sanctuary
<b>FLORIDA</b> Jacksonville: General Engineering Co.	<b>NEW YORK</b> Brooklyn: Nager Elec. Co.	<b>Pleasant Valley:</b> Cavo & Donegan
		<b>Poughkeepsie:</b> H. L. Martin I. B. Venable
		<b>OKLAHOMA</b> Tulsa: Allen Electric Co.

## TRIPLEX TIME SWITCHES



### ACCURATE ELECTRIC TIME

1. Waltham Watch Company movement
2. Self-starting synchronous motor
3. Silver finish dial, bronze numerals
4. Rotating seconds indicator
5. Tell-Tale interruption indicator
6. Thumb screw to set clock on time
7. 24 Hour rotating rim for clamps
8. ON and OFF clamps easily set around rim to control switching
9. Mercoid snap action switch mechanism for tilting mercury tubes
10. Independent hand throw for switching
11. ON and OFF switch position markings
12. Mercoid enclosed mercury tubes
13. 2 screws; a demountable mechanism
14. Moulded terminal blocks for wiring connections
15. Cadmium plated steel housing, gasketed, padlockable, sealable, knockouts
16. Glass window with bead and reflector

## TRIPLEX the synchronous motor SWITCH

### An Accurate Electric Clock

Combining all of the best features that make for accurate electric time—Self-starting synchronous motor, current interruption tell-tale indicator, and highest quality made in America Waltham movement.



### An Accurate Electric Switch

Featuring Mercoid mercury tubes with a snap action switch mechanism, close setting with operation exactly at minute desired, extra on and off clamps for additional operations and 24-hour setting rim.

**Two Year Guarantee**

*Write for Bulletin 10-C*

**TRIPLEX PRODUCTS CORPORATION, Clifton, N. J.**

# Suggested RESALE PRICES *for* Wiring Supplies

The prices listed on the following pages are merely suggested resale prices for the commonly used standard supplies and equipment employed in electrical construction work. They are based on average current trade costs throughout the country, very largely obtained from jobbers' price sheets, and are also based on average overhead charges.

\* \* \*

Obviously, prices can be suggested only for the widely used products that are nationally distributed, and under no circumstances is this section intended to function as a directory of products or manufacturers.

\* \* \*

The publishers wish to again emphasize that these are merely *suggested* resale prices and while every effort is made to make them universally applicable and accurate we cannot guarantee them or assume any responsibility for errors.

\* \* \*

The prices appearing in this section will be completely revised each month as trade prices may change.

*These prices apply only to the United States.*

Copyrighted, 1931

*by the*

Electrical Trade Publishing Co.



# Index

## To Suggested Resale Prices

### A

	Page
ACORNS—for Cords and Chains.....	PL-4 & 19
ADAPTORS and Reducers for Sockets.....	PL-4 & 19
ADAPTI Fittings and Boxes.....	PL-12 13 14
ADJUSTERS—for Cords.....	PL-4
ANCHORS or Expansion Shields.....	PL-10
ANNUNCIATORS—Bell.....	PL-4
ANNUNCIATOR Wire.....	PL-29
APPLETON Entrance Fittings.....	PL-13
ARMORED CABLE—BX and Similar.....	PL-9
"    "    Fittings.....	PL-14
ASBESTOS Millboard.....	PL-4
"    Cord for Appliances.....	PL-8
"    Range Wire.....	PL-29
ATTACHMENT Plug and Caps.....	PL-16
ATTACHMENTS—for Pull Sockets.....	PL-4

### B

BABY KNIFE SWITCHES.....	PL-21
BAR Hangers for Boxes.....	PL-5
BASES—for Sockets.....	PL-19
BAYONET Sockets.....	PL-19
BELLS AND BUZZERS.....	PL-6
BELL Annunciators.....	PL-4
"    Cords.....	PL-8
"    Transformers.....	PL-28
"    Wire.....	PL-29
BENDS and Elbows for Rigid Conduit.....	PL-9 & 10
BEND HICKS and Elbow Fittings.....	PL-13
"    Enclosed Fuse.....	PL-9
BOLTS—Carriage, Stove and Toggle.....	PL-8
"    Expansion and Anchor.....	PL-10
BOX—Connectors or BX Fittings.....	PL-14
BOXES—Adapti Boxes.....	PL-13
"    Cable and Loom.....	PL-4-5 & 6
"    Concrete.....	PL-5
"    Conduit.....	PL-4-5 & 6
"    Cutout or Service.....	PL-6
"    Floor.....	PL-6
"    Handy or Utility.....	PL-5 & 8
"    Laundry.....	PL-4
"    Mail.....	PL-15
"    Outdoor Meter.....	PL-22 & 26
"    Outlet.....	PL-4 & 5
"    Switch.....	PL-4
"    Entrance Switches—See Switches	
BRACKETS, Racks and Wireholders.....	PL-7 & 8
BREWERY CORD.....	PL-8
BUSHINGS for Rigid Conduit.....	PL-5 & 9
"    Porcelain.....	PL-5
"    for Sockets.....	PL-6 & 19
BUTTONS—Push for Bell Work.....	PL-6 & 7
"    Ceiling P. & S. Porcelain.....	PL-8
BUZZERS AND BELLS.....	PL-6
BX-BXL Armored Cables.....	PL-9

### C

CABINETS—Meter and switch.....	PL-16
CABLES—Armored and Lead Covered.....	PL-9
"    Deck.....	PL-8
"    Non-Metallic Romex, Etc.....	PL-9
"    Packing House.....	PL-8
"    Park—Non-Metallic.....	PL-29
"    Park—Steel Taped.....	PL-29
"    Rubber and Lead Covered.....	PL-29
"    Stage.....	PL-8
CANDLE Sockets.....	PL-19
CANDELABRA Sockets.....	PL-19
CANOPY Switches.....	PL-20 & 21
CANVASITE Cord.....	PL-8

### C—Continued

	Page
CAPS—for Attachment Plugs.....	PL-16
"    Entrance Fittings.....	PL-13
CARRIAGE Bolts.....	PL-8
CEILING Switches.....	PL-21
"    Buttons.....	PL-8
CHASE NIPPLES and Couplings.....	PL-16
CHAIN for Pull Sockets.....	PL-19
CIRCUIT Boxes and Residence Panels.....	PL-17
CLAMPS—Grounding.....	PL-9
"    Hangers.....	PL-15
"    Table for Bell Work.....	PL-7
"    or Straps for Pipe.....	PL-9 & 27
CLEAT Rosettes.....	PL-19
CLEATS—Porcelain Insulator.....	PL-15
CLIPS or Straps for Pipe.....	PL-9 & 27
"    for Loom.....	PL-9 & 15
COLORING Fluid or Liquid.....	PL-9
COMMERICAL Glassware.....	PL-14
CONCRETE Boxes.....	PL-5
CONDUIT—Rigid or Flexible Metal.....	PL-8
"    Bushings and Locknuts.....	PL-5 & 9
"    Couplings.....	PL-9
"    Elbows and Bends.....	PL-9 & 10
"    Fittings All Types.....	PL-11 to 14
"    Flexible Armored.....	PL-9
"    Hangers.....	PL-15
"    Locknuts and Bushings.....	PL-5 & 9
"    Nipples.....	PL-16
"    Pennies.....	PL-9
"    Reducers.....	PL-9 & 16
"    Thin Wall.....	PL-9
CONDULETS—Fittings.....	PL-11 & 12
CONNECTORS—Armored for BX, Etc.....	PL-14
"    Solderless.....	PL-10
"    Fixture, Wire & Cord.....	PL-10
"    Greenfield and BX.....	PL-14
"    Cord and Motor.....	PL-10
COMPOUND—Pothead.....	PL-17
CORDS—All Types.....	PL-8
"    For Pull Sockets.....	PL-19
"    Extension—Made-Up.....	PL-10
CORD Adjusters.....	PL-4
CORD Armored Lamp.....	PL-9
"    Connectors.....	PL-9 & 10
COUPLINGS—for Conduit.....	PL-9
COVERS for Outlet Boxes.....	PL-4 & 5
CURRENT TAPS.....	PL-19
CUTOUT Boxes—Steel.....	PL-6
CUTOUTS—Plug & Cartridge Enclosed.....	PL-9

### D

DAMP PROOF Office Wire.....	PL-29
DECK Cable.....	PL-8
DELTABESTON Cord.....	PL-8
"    Wire.....	PL-28
DIM-A-LITE Sockets.....	PL-19
DOOR Switches and Openers.....	PL-21
"    Trips and Springs.....	PL-7

### E

ELBOWS or Bends or Conduit.....	PL-9 & 10
ELECTRIC—Range Units.....	PL-19
ELECTROLET Entrance Fittings.....	PL-13
ENCLOSED Fuses.....	PL-10
"    Cutouts.....	PL-9
ENTRANCE Fittings.....	PL-13
"    Panel Switches Plug Type.....	PL-21
"    Safety Switches.....	PL-21 to 27
ERICKSON Couplings for Conduit.....	PL-9
EXPANSION Shields and Anchors.....	PL-10
EXTENSION Cords made up.....	PL-10
"    for Sockets.....	PL-19

### F

	Page
FAN HANGERS.....	PL-15
FEDERAL Bushings and Similar.....	PL-9
FEED THRU and Pendant Switches.....	PL-21
FITTINGS—Armored Cable.....	PL-14
"    Adapti.....	PL-13 & 14
"    Condulets and Similar.....	PL-11 & 12
"    Electrolets and Similar.....	PL-13
"    Entrance All Types.....	PL-13
"    Groundulets.....	PL-14
"    Kondu Threadless.....	PL-12
"    Spragulets and Wireless.....	PL-13
FIXTURE Blocks—Wood.....	PL-8
"    Cords.....	PL-8
"    Studs.....	PL-27
"    Wire.....	PL-29
FLASHERS Speeddoodle Plugs.....	PL-16
FLEXIBLE Metal Conduit.....	PL-9
"    Loom-Non-Metallic.....	PL-15
FLOOR Pushes and Treads.....	PL-6
"    Boxes.....	PL-6
FLUSH Receptacles.....	PL-17 & 18
"    Switches and Plates.....	PL-20
FRICITION Tape.....	PL-27
FUSES—All Types.....	PL-10
"    Blocks—Enclosed.....	PL-9
FUSE Wire.....	PL-10
FUSENTERS and House Panelboards.....	PL-17

### G

GASKETS—for Condulets.....	PL-11
G. E. Fittings—Entrance.....	PL-13
GEE VEE Fittings—Entrance.....	PL-13
GLASSWARE—Commercial.....	PL-14
"    —Modernistic.....	PL-14
GREENFIELD Flexible Conduit.....	PL-9
"    Connectors for Flexible.....	PL-14
GROUNDING Clamps.....	PL-9
GROUND Rods.....	PL-18
GROUNDULETS Fittings.....	PL-14
GUARDS—Lamp.....	PL-14

### H

HANDY BOXES.....	PL-5
HANGERS—Conduit and Cable.....	PL-15
"    Fan.....	PL-15
"    for Outlet Boxes.....	PL-5
HANDLES—for Sockets.....	PL-19
"    For Snap Switches.....	PL-20
HOLDERS—Shade.....	PL-15
HOUSE RACKS and Wireholders.....	PL-8

### I

INCREASERS for Conduit.....	PL-16
INSULATED Nails.....	PL-16
INSULATING Links for Chain.....	PL-15 & 19
"    Paint or Varnish.....	PL-17
"    Staples.....	PL-16 & 27
IRON Plugs.....	PL-17

### K

KNIFE Switches—Baby.....	PL-21
KNOBS—Tubes and Cleats.....	PL-14 & 10
KONDU Threadless Fittings.....	PL-12 & 13

*Electrical Contracting, December, 1931*



## L

LAG Screws.....	PL-27
LAMP GUARDS.....	PL-14
LAUNDRY Boxes.....	PL-4
LEAD Covered Armored Cables.....	PL-9
" Covered & Rubber Cov. Cables.....	PL-29
LEVOLIER Switches.....	PL-21
LINKS—Insulating.....	PL-15 & 19
" Renewable Fuse.....	PL-10
LIQUID for Coloring.....	PL-9
LOCKNUTS—Conduit.....	PL-8 & 15
LOOM—Non-Metallic Flexible.....	PL-15
" Clips.....	PL-9
LOCUST Pins.....	PL-7
LUGS—Soldering for Wire.....	PL-15
LUMINOUS Acorns for Cords.....	PL-4 & 19
" Buttons for Switches.....	PL-20

## M

MAGNET Wire.....	PL-29
MAIL Boxes.....	PL-15
METAL Molding.....	PL-15
" Wiremold.....	PL-16
" Reflectors.....	PL-19
METER Boxes and Switches Outdoor.....	PL-22 & 26
METER and Switch Cabinets.....	PL-16
METER Service Switches.....	PL-21 to 27
MINIATURE and Candelabra Sockets.....	PL-18
MOGUL Sockets.....	PL-19
MOTOR Cord Connectors.....	PL-10
MOLDING Metal.....	PL-15 & 16
" Wiremold.....	PL-16
MULTI Bushings.....	PL-5

## N

AILS—Insulated.....	PL-16
IPPLES for Conduit.....	PL-16
ON-METALLIC—Park Cables.....	PL-29

## O

OFFICE Wire.....	PL-29
OPENERS—Door.....	PL-21
OUTDOOR Meter, Boxes and Switches.....	PL-22 & 2
OUTLET Boxes and Covers.....	PL-4 & 5
OVALDUCT Metal Moulding.....	PL-16

## P

PANELBOARDS Small House Type.....	PL-17
PANEL Switches.....	PL-21
PARK Cable.....	PL-29
PASTE Soldering.....	PL-27
PENDANT Switches.....	PL-21
PENNIES—Conduit.....	PL-9
PINS—Locust.....	PL-7
PIPE—Rigid Conduit.....	PL-9
" Clamps and Straps.....	PL-9 & 27
" Nipples.....	PL-16
" Threaded.....	PL-17
PLATES for Receptacles.....	PL-18
" for Switches.....	PL-20
PLUG Cutouts.....	PL-9
PLUGS—Attachment and Appliance.....	PL-16
" Conduit.....	PL-9

## P—Continued

POTHEAD Compound.....	PL-17
PORCELAIN Bushings.....	PL-5
" Cutouts.....	PL-9
" Knobs and Tubes.....	PL-15
PUSH Buttons, Treads, Springs.....	PL-7

## R

RACKS and Wireholders.....	PL-7 & 8
RADIO RECEPTACLES.....	PL-18
RANGE—Units, Electric.....	PL-19
RAWLPLUGS.....	PL-19
RECEPTACLES—Flush.....	PL-17 & 18
" Radio.....	PL-18
" Sign.....	PL-18
" Surfaces.....	PL-18
" for Conduit.....	PL-10 to 14
REDUCERS—Conduit.....	PL-9 & 16
" Chase.....	PL-16
" Socket.....	PL-4
REFLECTORS—Metal.....	PL-19
REMOTE CONTROL Switches.....	PL-21
RODS for Grounding.....	PL-18
ROMEX and Similar.....	PL-9
ROSETTES—Porcelain.....	PL-18
" for Conduit Fittings.....	PL-11 to 14
RUBBER TAPE.....	PL-27

## S

SAFETY Switches—All Makes.....	PL-21 to 26
SALTS—Soldering.....	PL-26
SCREWS—Lag.....	PL-27
" Machine and Wood.....	PL-26
SERVICE Boxes or Cutout Boxes.....	PL-6
SHADE HOLDERS—Standard.....	PL-15
SHIELDS—Expansion.....	PL-10
SKEEDOODLE Flasher Plugs.....	PL-17
SLATE Base Cutouts.....	PL-9
SNAP Switches—Wall.....	PL-20
" Switches—Pull Cord Type.....	PL-20 & 21
SOCKETS—All Types.....	PL-19 & 20
SOCKET Adapters.....	PL-4
" Attachments.....	PL-4
" Bushings.....	PL-5 & 19
" Extensions.....	PL-19
" Handles.....	PL-19
" Twin.....	PL-19
SOLDER—All Types.....	PL-27
" Paste.....	PL-27
SOLDERING Lugs.....	PL-15
SOLDERLESS Connectors.....	PL-10
SPACERS—For Boxes.....	PL-4
SPEAKING Tubes.....	PL-15
SPRAGULETS Fittings.....	PL-13
SPRINGS—Window and Door.....	PL-6 & 7
SQUEEZE Connectors.....	PL-14
STAPLES for Bell Work.....	PL-16 & 27
STEEL Taped Park Cable.....	PL-29
STOVE Bolts.....	PL-8
STRAPS and Pipe Clamps.....	PL-9 & 27
STUDS for Fixtures.....	PL-27
SWITCH Boxes.....	PL-4
" Plates.....	PL-20
SWITCHES—Canopy.....	PL-21
" Door.....	PL-21
" Entrance and Panel.....	PL-21 to 27
" Flush-Push-Tumbler.....	
" Snap.....	PL-20
" Knife.....	PL-21
" Meter and Cabinet.....	PL-16
" Panel.....	PL-21

## S—Continued

SWITCHES—Pendant and Feed Thru.....	PL-21
" Pull Cord.....	PL-20 & 21
" Remote Control.....	PL-21
" Time.....	PL-20
SWITCHES SAFETY ENTRANCE TYPE.....	
" Bulldog.....	PL-24 & 25
" Columbia.....	PL-25
" Murray.....	PL-26
" Noark.....	PL-24
" Square D.....	PL-21 & 22
" Trumbull.....	PL-22
" Trumbull-Vanderpool.....	PL-22 & 23
" Wadsworth.....	PL-25 & 26
" Westinghouse.....	PL-23 & 24

## T

TABLE Clamps.....	PL-7
TAPE—Friction and Rubber.....	PL-27
TAPLETS—Conduit Fittings.....	PL-11
TAP—Current.....	PL-19
TELEPHONES.....	PL-27
" Wire.....	PL-29
TERMINALS and Soldering Lugs.....	PL-15
THIN Wall Conduit.....	PL-9
THREADED Pipe.....	PL-17
THREADLESS Conduit Fittings.....	PL-12
TIME Switches.....	PL-27 & 28
TOGGLE Bolts.....	PL-8
" Switches.....	PL-20
TRANSFORMERS—Bell and Toy.....	PL-28
TREADS—Floor.....	PL-6 & 7
TUBES—Porcelain.....	PL-15
" Speaking.....	PL-15
TUMBLER Switches and Plates.....	PL-19
TWIN Sockets.....	PL-19

## U

UTILITY Boxes.....	PL-5
UNILETS Conduit Fittings.....	PL-11

## V

V. V. FITTINGS for Conduit.....	PL-11
VAPORPROOF Fittings.....	PL-12
VARNISH and Paint.....	PL-17

## W

WEATHERCAPS Entrance Fittings.....	PL-13
WEATHERPROOF Wire.....	PL-29
" Conduit Fittings.....	PL-12
WIRE—Rubber Covered.....	PL-29
" Weatherproof.....	PL-29
" Annunciator.....	PL-29
" Asbestos Range.....	PL-29
" Connectors.....	PL-10
" Damp Proof.....	PL-29
" Delatabeston.....	PL-29
" Lead and Rubber Covered.....	PL-29
" Magnet.....	PL-29
" Telephone and Telegraph.....	PL-29
WIREHOLDERS and Brackets.....	PL-7
WIRELETS and Spragulets.....	PL-13
WIREMOLD.....	PL-16
WOOD Fixture Blocks.....	PL-8

## A-SUNDRIES

**ASBESTOS**  
Asbestos Millboard—Per Pound—30c.

## House-Surface Type—Hand Reset

## COUCH

### Electrical Reset

### ADAPTERS & REDUCERS

### EXTENSION ARMS FOR PULL SOCKETS

## ADJUSTERS For Cords

## ACORNS & TASSELS

## BOXES, SWITCH

**Single Gang—For Switch and Recep. for Old or New Work**

**With BRACKETS or EXTENDED EARS or LATH SUPPORTS  
For New Work**

**Covers Extra**

## TANDEM SWITCH BOXES

## DOOR SWITCH BOXES

## LAUNDRY BOXES

For Concrete Boxes See Page PL-5.  
For Solid Gang Boxes See Page PL-5.

## BOXES & COVERS, OUTLET

### CEILING BOXES, ROUND

### OUTLET BOXES, OCTAGON

Universal Nos.		Size and Description	Depth	Knochnuts Bottom Side	Price Black Galv'd.
24151	3/4"	Conduit Box.....	1-1/2"	4-1/2"	\$0.11 \$0.13
24151	3/4"	" " " " " "	1-1/2"	4-1/2"	.13 .15
24151 FS	3/4"	" " With Stud.....	1-1/2"	4-1/2"	.21 .23
54151	4"	Conduit Box.....	5-1/2"	4-1/2"	14 .17
54151	4"	" " " " " "	5-1/2"	4-1/2"	16 .19
54151 FS	4"	" " With Stud.....	5-1/2"	4-1/2"	16 .18
54155	4"	Cond. & Loom B.....	9-1/2"	12-1/2"	.21 .24
54171	4"	Conduit Box.....	24-1/2"	14-1/2"	.26 .30

Electrical Contracting, December, 1931







## Push Buttons, Etc.

## Brackets, Racks and Wireholders

## PUSH BUTTONS, TREADS, SPRINGS

## STANDARD PUSHES AND TREADS

Description	Price
Round 1 1/4" and 1 3/4" Stamped Brass.....	\$0.20
Round 2 1/4" Stamped Brass.....	.25
Round 2 1/4" with Card Holder Stamped Brass.....	.40
Rectangular 4x2" Stamped Brass.....	.40
Rectangular 3 1/4x1 1/4" Stamped Brass.....	.40
Oval 2 1/2x1 1/2" Stamped Brass.....	.30
Oval 4 1/2x2" Stamped Brass.....	.45
Pear Push Buttons—Wood or Composition.....	.60
Pear Push Buttons—Metal, Nickel or Brass.....	.85
Desk Buttons—1/4" Hole—Nickel.....	.75
Desk Buttons—1/2" Hole—Nickel.....	.65
Desk Buttons—3/4" Hole—Nickel.....	.45
High Voltage 3/4" Hole—110 Volts.....	2.40
Table Clamp with Push Button.....	1.00
Floor Pushes Combination Nickel.....	.85
Floor Treads—"Daisy"—"Dixie".....	1.50
Wood Push Buttons.....	.20

## BAKELITE OR COMPOSITION PUSHES

Round Plain 1 1/4" Diam.....	\$0.30	Rectangular Plain 1 1/2x3 1/4".....	\$0.40
Octagon Fancy 1 1/4x1 1/4" Diam.....	.85	Rectangular Fancy 1 1/2x3 1/4".....	.60
Oct. Card Holder 2 1/2x2 1/4" Diam.....	.40	Rec. Double Card Holder.....	.85

## DESK PUSHES—COMPOUND

Make and Description	1	2	3	4	5	6
Edw. #146—Bakelite Block.....	\$2.10	\$2.50	\$3.20	\$3.65	\$4.50	\$5.25
Edw. #197 Less Cord Bake Bl.....	3.50	4.75	6.00	7.25	8.50	9.75
Edw. #197 with 6' Cord Bake Bl.....	4.05	6.10	7.75	9.45	11.15	12.85
Edw. #190 Wood—Less Cord.....	4.00	5.35	6.60	8.10	9.40	10.80
Edw. #190 Wood with Cord.....	4.45	6.65	8.35	10.30	12.05	13.90
Fara. #4C Wood Less Cord.....	2.00	2.30	2.60	3.05	3.50	3.90
Fara. #2A Wood Less Cord.....	4.90	7.00	8.50	10.60	12.40	13.80
Fara. B.D.P. Bake. Less Cord.....	3.50	4.75	6.00	7.25	8.50	9.75
Fara. M.D.P. All Metal Less Cord.....	6.00	11.00	16.00	21.00	.....	.....
P&W #4 Wood Less Cord.....	2.60	2.80	3.50	4.30	4.85	5.60
P&W #5 Wood Angle Less Cord.....	.....	.....	13.00	.....	13.95	.....
P&W #12 Wood Less Cord.....	3.30	4.25	5.45	.....	6.00	.....

## DOOR AND WINDOW SPRINGS

Door Springs	Window Springs
Open Circuit Door Spring.....	Open Circuit Single.....
Closed Circuit Door Spring.....	Open Circuit Double.....
Open Circuit Make and Break.....	Close Circuit Single.....
Open Circuit Door Trip.....	Open Circuit Transom.....

## OTHER PUSH BUTTONS

Ansonia					
Round Stamped		Price	Round Cast		Price
514	1 1/4" Loose Back.....	\$0.30	511	1 1/4" Loose Back.....	\$0.90
515	2 1/4" Loose Back.....	.40	512	2 1/4" Loose Back.....	1.00
579	1 1/4" Flush Push.....	1.00	508-10	2 1/4" Loose Back.....	1.00
E33	1 1/4" Flush Push.....	1.00	540	2 1/4" Loose Back.....	.60
			550	2 1/4" Loose Back.....	.85
			570	2 1/4" Loose Back.....	.75
F-33	Stamped Flush Push.....	\$0.70	545	Oblong 2 Gang for Cards.....	\$1.85
G-33	Stamped Diamond Push.....	.70	545	Oblong 3 Gang for Cards.....	2.65
521	Stamped Push.....	.75	545	Oblong 4 Gang for Cards.....	3.65
528-534	Stamped Push.....	.95	546	Oblong 1 Gang.....	1.65
536-537	Stamped Push Loose Back.....	1.00	547	Oblong 2 Gang.....	1.50
538	Stamped Oblong Push.....	1.25	549	Oblong 1 Gang.....	1.20
541	Oblong for Card.....	1.65	577	Diamond Push.....	.70
544	Oblong for Card.....	1.20	578	Diamond Push.....	.75
Combination Floor Pushes Complete 573.....					2.50
700 1 Point Wood Base Switch.....					.45

## Edwards

Round Desk Buttons	Oblong Push Buttons
621—1/4" Hole.....	602—2 Gang for Cards.....
622—1/2" Hole.....	607—Single for Cards.....
625—3/4" Hole.....	608—Single.....
1786—2 1/4" Watertight.....	650—Single Solid Cast Brass.....

## Partrick &amp; Wilkins

Round Push Buttons	Price
Stained Wood Push #2.....	\$0.15
Oak Wood Regular #1.....	.85
Oak Open, Closed and Dbl. Cont. #1.....	.65
Oak Triple Contact #1.....	.90
Cast Brass 1 1/4" Diam. #8.....	.55
Cast Brass 2 1/4" Diam. #9.....	.65

## Oblong Pushes

16 Cast Brass 4 1/4x1 1/4" Screw Cap.....	\$1.55
31 Cast Brass 5x2 1/2" Screw Cap.....	2.15
44 Cast Brass 4x2" Screw Cap.....	1.40
708 Wrought Push and Speak 1 Pce.....	1.00
907 2 Button and Card Holder.....	2.15
908 3 Button and Card Holder.....	2.95
909 4 Button and Card Holder.....	4.55

## Desk Push Buttons

Car Push 1/4" Hole Black Center.....	\$0.45
Multiple 3/4" Hole Black Center.....	1.35
Pony R. C. 3/4" Hole Black Center.....	1.85

## Pear Shape Pushes

Compound Maple 2 Button.....	\$2.00
Compound Maple 3 Button.....	3.00
Wood Rosettes for above.....	.40

## MULTIPLE PUSH BUTTONS

## Couch "Pushrites"

With Card Holders

Number of Buttons	Plain Base	Wood Base Type	Weighted Base	Flush Brass Plate Type
	Number	Price	Number	Price
4	7900	\$ 3.35	7980	\$ 3.75
6	7940	4.60	7989	5.20
8	7910	5.80	7990	6.65
12	7921	8.30	79010	9.60
16	7930	10.80	79020	12.45
20	793	13.30	7902	15.40
			797	21.60

## COUCH UNMOUNTED PUSH BUTTONS "WORKRITES"

No. 97 for 1/4" Hole.....	\$0.50
Adaptor No. 0684 for same.....	.05

## BRACKETS, RACKS AND WIREHOLDERS

Findlay—G. E.—Hubbard—Joslyn and National

## HOUSE BRACKETS

For Pin Type Insulators, Less Insulators

Description	No. of Wires	Spacing	Price	Description	No. of Wires	Spacing	Price
Light Type	Two	9"	\$0.25	Corner Type	Two	9"	\$0.30
	Three	6 1/2"	.55		Three	6 1/2"	.80
Heavy Type	One	9"	.40				
	Two	9"	.80				
	Three	6 1/2"	1.10				

## HOUSE RACKS

With Insulators Attached

Description	No. of Wires	Spacing	Price	Description	No. of Wires	Spacing	Price
Light Type	One	4 1/2"	\$0.40	Heavy Type	Two	4"	\$1.10
	Four	4 1/2"	.95		Three	4"	1.65
	Two	6"	.80		Four	4"	1.75
	Three	6"	.95		Five	4"	2.10
		6"	1.20				2.70

## WIREHOLDERS

Separable Base With Insulator

Light Type	Two	6"	\$0.55	Light Type	Three	4 1/2"	\$0.80
		9"	.60			6"	.85

## WIREHOLDERS

With Insulators Attached

Description	No. of Wires	Spacing	Price	Description	No. of Wires	Spacing	Price
Light Type	One	6"	\$0.30	Heavy Type	One	6"	\$0.65
	Two	6"	.55		Two	6"	1.25
	Three	6"	.85		Three	6"	1.30
		6"	.85			6"	1.85
							1.05

## SECONDARY RACKS

With Insulators Attached

Description	No. of Wires	Spacing	Price	Description	No. of Wires	Spacing	Price
Light Type	Two	6"	\$0.90	Heavy Type	Two	8"	\$1.30
	Three	6"	1.30		Three	8"	2.15
	Two	6"	.85		Two	8"	1.20
	Three	6"	1.20		Three	8"	1.35
	Two	8"	.90			8"	2.00
	Three	8"	1.30				

## WIRE HOLDERS

All Porcelain Screw Type Single Point

Description	Price
2 1/2x2 1/2"—20x2" Wood Screw.....	\$0.20
1 1/2x2 1/2"—20x2" " ".....	.14
2 1/2x3 1/2"—22x2 1/2" " ".....	.25
2 1/2x3 1/2"—22x2" " ".....	.20
Swinging Round Knob 22x2" Wood Screw.....	.35
" Oblong " 22x2" " ".....	.35
" Round " 3/4x3" Lag Screw.....	.35
Rigid Oblong Knob 22x2" Wood Screw.....	.25
" Large " 24x2 1/2" " ".....	.60

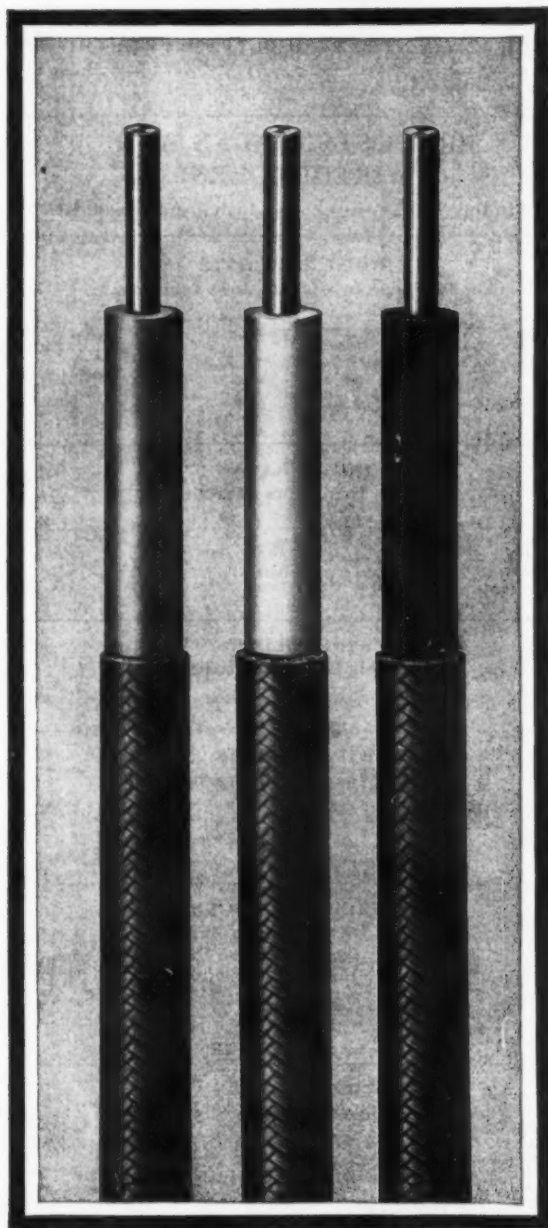
## SPOOL INSULATORS

All Porcelain For Secondary Racks

Description	Price
3" x3 1/2" One Groove.....	\$0.20
3" x3 1/2" Two ".....	.25
3" x3 1/2" One ".....	.30
2 1/2" x2 1/2" ".....	.10
2 1/2" x2 1/2" ".....	.15
3" x3 1/2" ".....	.18
Oblong Insulator—Light Type.....	.15
" Heavy Type.....	.18

These prices apply only to the United States

# A Greater Value than Ever



## G-E Code Wire *with* Colored Rubber Insulation *for* Identifying *the* Grade

G-E Code Wire is now made with a distinguishing color of rubber insulation for each of the three grades. Yet, with this new feature the price to you is the same as before.

BLACK rubber insulation is used for Code grade, RED for Intermediate grade, and GREEN for 30% grade. With these wires it is possible to show at a glance the grade used without the necessity for long and expensive laboratory tests.

All of the best characteristics of the old compounds have been retained. In addition, anti-oxidants have been added which increase the life of the rubber and give you, in the three commercial grades of G-E Code Wire, "performance test compounds".

G-E Code Wire gives you the highest quality and greatest workability, with the additional advantage of enabling you to prove on sight that the grade specified has been installed. For all these advantages you pay no more than before. See your G-E Merchandise Distributor, or write Section W-3212, Merchandise Department, General Electric Company, Bridgeport, Connecticut.

**GENERAL  ELECTRIC**  
**CODE WIRE**

MERCHANDISE DEPARTMENT, GENERAL ELECTRIC COMPANY, BRIDGEPORT, CONNECTICUT.



Years ago, we decided against competition with our dealers . . . and from that time on cooperated with them.

Months ago, we began to advertise nationally and by direct-mail

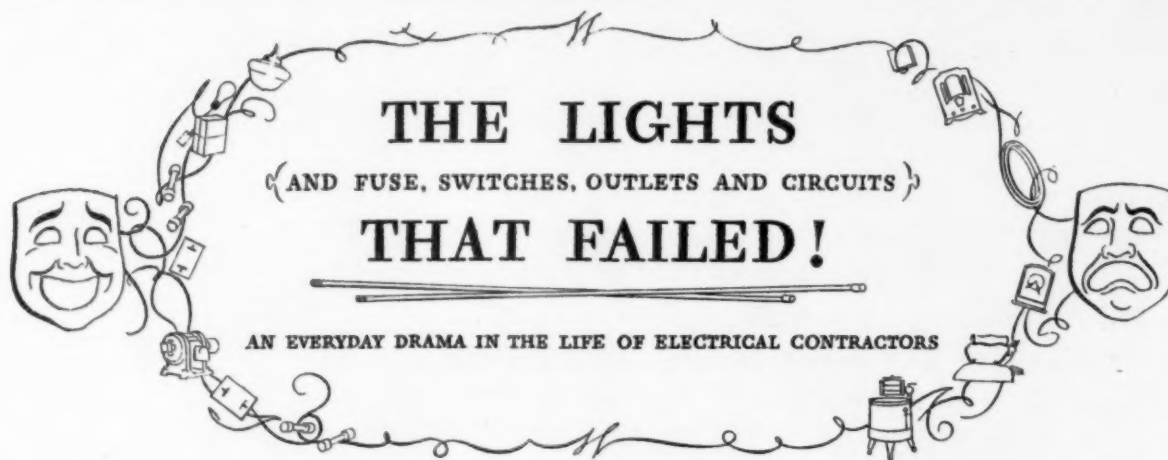
1. that we recognized as the logical clientele of the "motor specialists" those hundreds of thousands of establishments which do not maintain special departments to specify, buy, install and service electric motors

2. that we would cooperate in every way possible to protect our dealers in their logical field.

That recognition is the firm foundation upon which rests the very harmonious relations between us and all motor specialists.

**Wagner Electric Corporation**  
6400 Plymouth Avenue, Saint Louis, U.S.A.

L131-8XA



**SCENE I**—*Early winter evening. The young bride is hard at work in the kitchen of her new home—preparing the meal, tidying up, hurriedly ironing some odds and ends left over from the afternoon . . . Suddenly a fuse blows. Everything is plunged in darkness.*

**YOUNG BRIDE**:—"Heavens, what's that! What'll I do! I can't cook—I can't see—I can't do anything! And I don't know a thing about electricity!"

*Thinks desperately—then getting the family flashlight, rushes to telephone directory. Looks up "Electrician" . . . Calls the first one on the list. A gruff voice answers.*

**ELECTRICAL CONTRACTOR**:—"Lights won't light, eh? All right, I'll see what's wrong."



**SCENE II**—*Electrical Contractor arrives. Replaces fuse.*

**BRIDE**:—"What was it?"

**CONTRACTOR**:—"Just a fuse . . . Get 'em anywhere. It's a good thing to have a few extra."

*And that, ordinarily, would have been the end of it. But this contractor is different. He pauses.*

**CONTRACTOR**:—"Wonder what made that fuse blow . . . Mind if I look around a bit?"

**BRIDE**:—"Is anything wrong with our wires?"

**CONTRACTOR**, *after examining several rooms*:—"Oh, not much—just a bunch of bad connections and a lot of overloaded

circuits and one or two other things—that's all . . . Say, could I talk this over with your husband—tonight?"

**BRIDE**, *mystified*:—"Why, certainly. He'll be in."



**SCENE III**—*Later in evening. Contractor and husband are talking.*

**CONTRACTOR**:—"Your whole wiring job is inadequate . . . Circuits overloaded everywhere . . . And look at those double-sockets—you haven't half enough outlets! No wonder the fuse blew."

**HUSBAND**, *surprised but not quite sold*:—"But wouldn't it cost money?"

**CONTRACTOR**:—"Yes, it will. It'll cost a little money. But isn't it worth it—not to be tripping over wires—not to have fuses always blowing at the wrong time—to be able to have your radio and your lights *where* you want them. After all, you'll probably live in this house a long time—and a good electrical job will make it better to live in."

**HUSBAND**, *interested*:—"What do you suggest?"

**CONTRACTOR**:—"Well, I can give you a first-class wiring job with quality materials that *won't*

*break down*. But there are other things, too. For example, you can have a real kitchen light that won't strain your wife's eyes. And so on. It's up to you."

**HUSBAND**:—"Not a bad idea. Never thought of it that way . . . Make me up an estimate."

*(And the job was as good as sold then and there. Objections to costs melted away when the contractor explained what these costs would buy in terms of convenience and in freedom from annoying breakdowns . . . But that's not all . . .)*



**EPILOGUE**—*A month later the contractor drops in on the Newlyweds again. Husband greets him cordially:*

**HUSBAND**:—"Say, you're just the man I want to see. You did a mighty fine job on this house . . . I run a small factory downtown. Do you do industrial wiring by any chance? . . ."

### Finis

This little drama points its own moral well enough. The electrical contractors who see in the cause of adequate wiring a challenge and an opportunity are usually the successful ones. Furthermore, they are rendering a real service to the community—a service in which Graybar is glad to participate by providing, not only a proven source of quality electrical materials—but continued publicity in the interests of better wiring as well.

# GraybaR

OFFICES IN 76 PRINCIPAL CITIES.  
EXECUTIVE OFFICES: GRAYBAR BLDG., N. Y.

**ANOTHER C-H PROFIT OPPORTUNITY!**

# PRESENTING the NEW

## C-H BRANCH CIRCUIT FUSE PANEL LINE

- all Underwriter Approved
- all priced for today

**T**HE trend has been strongly toward the installation of branch circuit fuse panels in the home or apartment itself. Following this trend means more wiring work, and keeps your service up-to-date.

To enable you to capitalize fully on the trend, Cutler-Hammer announces a new line of two-to-twelve circuit flush and surface type panels.

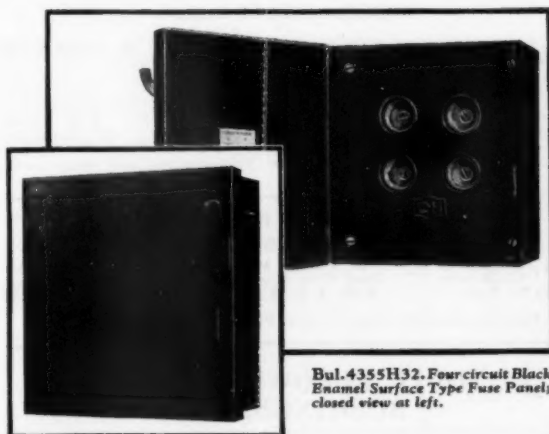
Each is Approved as Standard by the Underwriters Laboratories. Each has design and construction features that recommend them to you and your customers—developments that make the job easier to install, better-looking, more satisfactory, more profitable.

### CONSIDER THESE FEATURES

Flush and surface type panels, both Underwriter Approved. Solid Thermoplasx shatterproof universal



Bul. 4355H28. Eight circuit Black Enamel Flush Type Fuse Panel; closed view at left.



Bul. 4355H32. Four circuit Black Enamel Surface Type Fuse Panel; closed view at left.

unit type fuse blocks. Exposed parts nickel-plated. Very easy to wire. Concentric knock-outs readily removed with twist of pliers. Each panel arranged for either 2 or 3 wire mains on grounded, identified systems. Complete wiring diagrams and circuit designations inside covers. All panels take paint, are black enameled, or luminized as desired.

The new line is part of Cutler-Hammer's complete up-to-the-minute Wiring Device, Safety Switch and Meter Service Switch line, and is built to C-H standards and priced to sell today and make real profits for the Contractor. Now you may use one complete fuse panel line, all Underwriter Approved.

Get acquainted with these new winners through your Independent Wholesaler! **CUTLER-HAMMER Inc.**, *Pioneer Manufacturers of Electric Control Apparatus*, 1306 St. Paul Avenue, Milwaukee, Wisconsin.

# CUTLER HAMMER

*High Quality Safety Switches For Every Service*

(A-5060)



# PL-8

## Brackets and Racks

### UNIVERSAL RACK UNITS

Rack Foot.....	\$0.20
4" Extension.....	.25
8" ".....	.35
12" ".....	.45

### INSULATOR SUPPORTS

#### Universal

Size	Price	Size	Price
1".....	\$0.24	2 1/4".....	\$0.85
1 1/4".....	.40	1 1/2".....	.50
2".....	.60	2".....	.65

### WOOD BRACKETS & PINS

#### Standard

##### Wood Brackets

1 1/2"x2" x10".....	\$0.07	1 1/2"x2" x12".....	\$0.08
1 1/2"x2" x12".....	.08	2" x2 1/4"x12".....	.10
1 1/2"x2 1/4"x12".....	.09	2" x2 1/2"x12".....	.10
		2" x3" x12".....	.15

##### Pins

Locust 1 1/4"x8".....	\$0.06	Locust 1 1/2"x9".....	\$0.10
Oak 1 1/4"x8".....	.05	Oak 1 1/2"x9".....	.08

## B-SUNDRIES, BOLTS, ETC.

### CARRIAGE BOLTS

#### Galvanized

Diam.	Length	Price	Diam.	Length	Price
1/4".....	3"	\$0.03	1/2".....	4"	\$0.05
1/2".....	3 1/2"	\$0.04	3/4".....	5"	\$0.05
3/4".....	4"	\$0.04	1".....	5 1/2"	\$0.06
1".....	4 1/2"	\$0.05	1 1/4".....	6"	\$0.07
1 1/4".....	5"	\$0.06			
1 1/2".....	5 1/2"	\$0.07			

### MACHINE BOLTS WITHOUT WASHERS

#### Galvanized

Diam.	Length	Price	Diam.	Length	Price
1/4".....	3"	\$0.04	1/2".....	4"	\$0.05
1/2".....	3 1/2"	\$0.05	3/4".....	5"	\$0.06
3/4".....	4"	\$0.06	1".....	5 1/2"	\$0.07
1".....	4 1/2"	\$0.07	1 1/4".....	6"	\$0.08
1 1/4".....	5"	\$0.08			
1 1/2".....	5 1/2"	\$0.09			

### FLAT CROSS ARM BRACES

#### Galvanized

Diam.	Length	Price	Diam.	Length	Price
1/4".....	20"	\$0.20	1/2".....	20"	\$0.25
1/2".....	22"	\$0.22	3/4".....	20"	\$0.25
3/4".....	24"	\$0.24	1".....	20"	\$0.30
1".....	26"	\$0.26	1 1/4".....	20"	\$0.35
1 1/4".....	28"	\$0.28			
1 1/2".....	30"	\$0.30			

### STOVE BOLTS

#### Round or Flat Head

Length	Price	Diameter	Price
Up to 1".....	\$0.10	1/4".....	\$0.15
1" to 1 1/2".....	.10	1/2".....	.20
1 1/2" to 2".....	.10	3/4".....	.25
2" to 2 1/2".....	.10	1".....	.30
2 1/2" to 3".....	.10	1 1/4".....	.35
3" to 4".....	.10	1 1/2".....	.40
		2".....	.45

### TOGGLE BOLTS, STEEL

#### "Paine"

Size—Diameter	Long	Price	Size—Diameter	Long	Price
1/4".....	2"	\$0.10	1/2".....	3"	\$0.10
1/2".....	2 1/2"	\$0.10	3/4".....	3 1/2"	\$0.10
3/4".....	3"	\$0.10	1".....	4"	\$0.10
1".....	3 1/2"	\$0.10	1 1/4".....	4 1/2"	\$0.11
1 1/4".....	4"	\$0.11	1 1/2".....	5"	\$0.12
1 1/2".....	4 1/2"	\$0.12			
2".....	5"	\$0.13			
2 1/2".....	5 1/2"	\$0.14			

NOTE: For Brass Toggle Bolts—2 1/2 times above prices.

### REDUCING WASHERS

#### For Outlet Boxes & Steel Cabinets

Reducing Washers	Price	Reducing Washers	Price
Thomas & Betts.....	\$0.02	1 1/4".....	\$0.04
R. H. Green.....	.02	1 1/2".....	.05
		2".....	.06

### K. O. SEALS

#### For Outlet Boxes & Steel Cabinets

For Closing 1/2" K. O.....	\$0.04
For Closing 3/4" K. O.....	.06
For Closing 1" K. O.....	.08
Ceiling Button—P & S Porcelain No. 170—Each.....	.12
Switch Bases—See Snap Switches Page PL-19.	

## CORDS, FIXTURE, LAMP AND HEATER

### FIXTURE CORD—ONE WIRE

Type	Price	Type	Price
Cotton Covered—Light.....	No. 18 \$0.11	No. 14 \$0.12	No. 12 \$0.13
Cotton Covered—Heavy.....	F-64 .01 1/2	.02	.03
Artificial Silk—Light.....	F-64 .01 1/2	.02 1/2	.03
Artificial Silk—Heavy.....	F-32 .01 1/2	.03	.04

### LAMP CORD—TWO WIRE

Type	Price	Type	Price
Cotton Covered Twisted Pair.....	C .02	No. 16 \$0.04	No. 12 \$0.06
" " Parallel Pair.....	PO .02 1/2	.04	.05
" " Twisted Pair.....	PD .03	.05	.06
Artificial Silk Twisted Pair.....	C .02 1/2	.04	.06
" " Parallel Pair.....	PO .02 1/2	.05	.07

### LAMP CORD, REINFORCED—TWO WIRE

Type	Price	Type	Price
Cotton Covered Light Type 1/4".....	PS .03	No. 16 \$0.04	No. 12 \$0.07
" " Heavy 1/4".....	P .04	.05	.07
Weatherproof 1/4".....	PSWP .03 1/2	.04	.05
" " 1/2".....	PWP .05	.07	.10

### HEAVY DUTY PORTABLE CORD

#### "Duracord" or Similar.

Type	Price	Type	Price
PS Light 2 Cond. Port. Cord.....	.07	No. 18 \$0.09	No. 14 \$0.12
P Heavy 2 " " " ".....	.08	.10	.12
" " 3 " " " ".....	.10	.12	.15
" " 4 " " " ".....	.12	.15	.20

### ALL RUBBER CORD

#### "Tirex" "Royal" "Super-Service" or Similar

Type	Price	Type	Price
SJ Junior 2 Conductor Black.....	No. 18 \$0.06	No. 16 \$0.08	No. 12 \$0.10
" " 2 " Green.....	.08	.10	.12
" " 3 " Black.....	.11	.14	.17
S Type Heavy 1 Conductor Black.....	.08	.09	.10
" " 2 " " ".....	.12	.14	.16
" " 3 " " ".....	.15	.18	.21
" " 4 " " ".....	.17	.21	.25

### HEATER CORD

Type	Price	Type	Price
Asbestos Covered Two Wire.....	No. 18 \$0.05	No. 16 \$0.06	No. 12 \$0.08
Stand. Twisted or Wound Asbest. 1/4".....	.05	.06	.08
American Beauty Heater Cord Super.....			
Flexible.....			.12
Rockbestos Heater Cord.....	.07	.08	.10
Universal No. 9092 Super Flexible.....		.08	.10

Type	Price	Type	Price
"Deltabeston" Heater Cord Two Wire No. 18.....	No. 18 \$0.08	No. 16 \$0.10	No. 12 \$0.11
Type A Asbestos Braid Loco Cab.....	.08	.09	.10
" C Cotton Braid.....	.06	.07	.08
" D " " on ea. cond.....	.07	.08	.09
" E Cotton on ea. Cond. & over.....	.08	.10	.12

NOTE—For Armored Cords See Page PL-9.  
"Extension Cords See Page PL-10.  
"Fixture Wire See Pages PL-26 & 27.  
"Bell Wire See Page PL-27.

### MISCELLANEOUS CORDS

Description	Type	Price	Description	Type	Price
Brewery Cord.....	CB	No. 18 \$0.02	No. 16 \$0.03	No. 12 \$0.04	No. 10 \$0.05
Canvasite Cord.....	CC	.03	.04	.05	.06
Deck Cable.....	PWP	.05	.07	.10	.12
Packinghouse Cable.....	PKWP	.03	.04	.05	.06
Stage & Theatre Cable.....	T	.03	.04	.05	.06
Packinghouse and Stage Cable.....	K	.03	.04	.05	.06

Type "K" replaces Brewery, Canvasite and Packinghouse Cable, which are no longer approved by N. E. Code.

### CONDUCTING BELL CORD

#### Spun Silk

Number of Conductors	Price	Number of Conductors	Price
2.....	\$0.08	8.....	\$0.25
3.....	.15	10.....	.35
4.....	.20	14.....	.50
5.....	.21	18.....	.70

Note—For Armored Lamp Cord See Page PL-9.

## CONDUIT, ELBOWS, COUPLINGS, BUSHINGS, ETC.

### RIGID CONDUIT

Black	Galvd.	Cutting & Threading	Cutting Only
1/2".....	\$0.10	\$0.11	\$0.20
3/4".....	.11	.12	.20
1".....	.16	.17	.25
1 1/4".....	.22	.24	.30
1 1/2".....	.26	.29	.35
2".....	.35	.39	.40
2 1/2".....	.55	.62	.60
3".....	.72	.80	.80
3 1/2".....	.92	1.03	.70
4".....	1.12	1.23	.80

These prices apply only to the United States

Electrical Contracting, December, 1931

	1½"	¾"	1"	1¼"	1½"	2"
Threadless.....Per Foot	\$0.07	\$0.09	\$0.12	\$0.15	\$0.17	\$0.21
Adaptor Wpl. ....Each	.10	.15	.26	.65	.85	1.30
Couplings or Conn..."	.12	.18	.30	.65	.85	1.30
Elbows less Coupling.....				.50	.60	1.10

NOTE—No Coupling is included in the above thin wall prices.

**Price Each**

Size Each	Bends or Elbows		Couplings		Bushings		Locknut		Erickson Coupl. or Unions
	Black Galv.	Galv.	Black Galv.	Galv.	Black Galv.	Galv.	Black Galv.	Galv.	
1/4"	\$ .14	..16	..09	..10	..01 1/4	..01	..35	..21	
1/2"	..18	..21	..15	..14	..02	..01 1/4	..50	..21	
3/4"	..28	..32	..16	..18	..05	..02 1/2	..70	..28	
1"	..38	..43	..23	..24	..07	..04	1.10	..42	
1 1/2"	..51	..58	..28	..31	..09	..06	1.60	..56	
2"	..83	..95	..37	..41	..15	..10	3.35	..70	
2 1/2"	1.35	1.55	..63	..69	..23	..16	6.80	1.30	
3"	3.38	4.08	..72	..79	..35	..28	9.75	1.70	
3 1/2"	7.87	9.00	..96	1.04	..70	..32	.....	2.90	
4"	9.10	10.40	1.20	1.30	1.10	..46	.....	3.50	

Also on Page PI-10.

Also on Page PI-5.

Also on Page PI-12.

Size		Size	
1 1/2".....	\$0.01	2 1/2".....	\$0.04
1 3/4".....	.01	2 3/4".....	.05
1".....	.01 1/2	3".....	.07
1 1/4".....	.02	3 1/2".....	.08
1 1/2".....	.03	4".....	.10

	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
Single Strip Per Foot...	\$ .09	\$ .12	\$ .14	\$ .19	\$ .40	\$ .45
Double Strip Per Foot...	.11	.14	.17	.23	.42	.50

For Fittings for Metallic Conduit See Page PL-14.  
 For Non-Metallic Conduit or Loom See Page PL-15.  
 For Steel Armored Cable & Lead Covered See Next Item.

Price per Foot.....	$\frac{1}{8}$ " & $\frac{1}{4}$ "	$\frac{3}{8}$ "	$\frac{1}{2}$ "	$\frac{3}{4}$ "
	\$ .25	\$ .30	\$ .45	\$ .55

Price Each.....	$\frac{1}{8}$ " \$ .02	$\frac{3}{4}$ " \$ .03	1" \$ .04	$1\frac{1}{4}$ " \$ .08	$1\frac{1}{2}$ " \$ .14	2" \$ .22
-----------------	------------------------	------------------------	-----------	-------------------------	-------------------------	-----------

For Pipe Straps, see Page PL-25. For Solder, Sticks, etc., Page PL-25.

ARMORED CABLE, "BX", "ABC", "FLEXSTEEL", OR  
SIMILAR

		Price Per Foot		
		No. 14	No. 12	No. 10
TWO	Solid	Single	Strip	
CONDUCTOR	Stranded	"	"	
THREE	Solid	"	"	
CONDUCTOR	Stranded	"	"	
FOUR	Solid	"	"	
CONDUCTOR	Solid	"	"	
ONE	Stranded	"	"	
CONDUCTOR	2 Conductor	"	"	
OVALFLEX	3 Conductor	"	"	
		Price Per Foot		
		No. 8	No. 6	No. 4
TWO	Solid	Single	Strip	
CONDUCTOR	Stranded	"	"	
THREE	Solid	"	"	
CONDUCTOR	Stranded	"	"	
FOUR	Solid	"	"	
CONDUCTOR	Solid	"	"	
ONE	Stranded	"	"	
CONDUCTOR		"	"	

Double Strip Armored Cable add 30% to above prices.	
Anti-Short Fibre Bushings for ABC Cable, Each.....	\$ .02
Clips or Staples 3/4" for Armored or Non-Metallic Cable, Each.....	.01

			Per Foot
	Size—No. 8	No. 6.	No. 4
Three Conductor Stranded Service Cable.....	\$ .30	\$ .40	\$ .50

				Price Per Foot		
				No. 14	No. 12	No. 10
Single Conductor	Solid Lead	Covered	.....	\$.08	.....	.....
Two Conductor	Solid	"	.....	.16	\$.20	\$.25
Three	"	"	.....	.23	.27	.32
	Stranded	"	.....	.....	.....	.....

		Price Per Foot		
		No. 8	No. 6	No. 4
Single	Covered			
Conductor	Stranded	\$ .16	\$ .22	
Two	Solid			
"	Stranded	.95	.67	
Three	Solid			
"	Stranded	.47	.67	\$ .90

	Per Foot		
Single Strip	No. 18	No. 16	No. 14
Plain Armored Lamp Cord, Two Conductor.....	\$ .10	\$ .12	\$ .15
Add 30% for Double Strip			

(With or Without Ground Wire)	#14	#12	#10	#8	#6	#4
2 Conductor per Foot.....	\$0.05	\$0.07	\$0.10	\$0.15	\$0.23	\$0.28
3 Conductor per Foot.....	.08	.10	.13	.20	.27	.43
Fitting-Straps Each.....	.01	.01	.01	.01	.01	.01
Fitting-Clips Each.....	.03	.03	.03	..	..	..
Fitting-Connectors Each.....	.10	.10	.20	.20	.30	.55

CUTOUTS OR FUSE BLOCKS		
PLUG CUTOUPS		
30 Amp. Porcelain		
Description		Price
Single Pole—Main Line	62569	\$.32
Double " "	62570	".35
Triple " "	62165	".50
Double Pole Single Branch	61935	".50
" " Double " "	62587	".54
" " Single or Double Cross Branch	8020	".40
Triple to D. P. Double Branch	62169	".60
Triple Pole Single Branch	8042	".85
" " Double " "	62135	".85

BRYANT		With Short Cover		With Long Cover		
		Numbers	Price	Numbers	Price	
3	Wire Double Branch—4 Circuit..	72035	\$3.35	82035	\$3.65	
G. E. or TRUMBULL		G.E.	Trumbull	Without Cover		
		Numbers	Price	G.E.	Price	
3	Wire Single Branch—2 Circuit.	2435	3199	\$1.35	2436	\$1.65
3	" Double "—4	2440	4199	1.80	2441	1.85

	0-30	31-60	61-100
	Amp.	Amp.	Amp.
Single Pole Main Line Enclosed Porcelain.....	\$ .40	\$ .65	\$ 1.20
Double " " " "	.55	1.20	2.30
Triple " " " "	.85	1.65	3.30
Double Pole Single Branch Porcelain.....	.75	1.60	..
" " Double " " " "	1.25	3.30	..
Triple to Double Pole Double Branch Porcelain ..	2.80	..	..
Triple Pole Single Branch Porcelain ..	1.30	3.00	..
Triple Pole Double Branch Porcelain ..	2.40	5.40	..
Single Pole Main Line Cutout Base 600 Volt.....	.70	1.00	1.90

SINGLE BASE							
250 Volt	600 Volt	30 A.	60A.	100A.	200A.	400A.	600A.
Single Pole-Slate Base-250 V....		\$ .60	\$ .90	\$ 1.25	\$ 2.10	\$ 5.20	\$ 6.00
" " " 600 V.....		....	....	1.60	2.50	6.00	7.15

Prices on cutouts do not include fuses

GROUND CLAMPS									
	3/4 to 1"		3/4 to 2"		3/4 to 3"		3/4 to 4"		
Standard Adjustable Ground Clamps, any make	No. 3 \$1.12		No. 4 \$1.15		No. 5 \$1.20		No. 6 \$1.35		
Blackburn.....	No. 3 \$1.24		No. 4 \$1.28		No. 5 \$1.35		No. 6 \$1.45		
Other Types	B 3/4" 1" 1 1/4" 1 1/2" 2" 2 1/2" 3" 4"								
Chase Shawmut 3660-6S	\$1.25	\$1.30	\$1.35	\$1.45	\$1.50	\$1.60	\$1.65	\$1.70	
G. V. A Series 5000.....	.25	.30	.35	.45	.50	.60	.65	.70	

	<sup>3/6"</sup>	<sup>3/8"</sup>	<sup>1/2"</sup>	<sup>5/8"</sup>	<sup>1"</sup>	<sup>1 1/4"</sup>	<sup>1 1/2"</sup>	<sup>2"</sup>	<sup>2 1/2"</sup>	<sup>3"</sup>
Galvnd. Straps, 2 Hole	\$.01	\$.01	\$.01	\$.01	\$.02	\$.02	\$.04	\$.05	\$.08	\$.08
Per Pound.....	.20									
Non Straps Per Pound.....	45	40	25	20	13	12	7	5	4	
Lighted Straps, 1 Hole	.04	.05	.08	.08						
Mail Iron Clamps, 1 Hole	.04	.05	.06	.08	.12	.18	.35	.50	.60	
P & S Conduit Clamps										
With Bolts-Series 1400	.10	.14	.18	.20		.25				
Clips for Loom.....										3c Each or 3 for 5c

(See Also Page PL-27)

	7 ounce Cans	15 ounce Cans	30 ounce Cans	$\frac{1}{2}$ Pint Bottle	1 Pint Bottle	Quart Bottle
Crescent (McGill).....				\$1.25	\$2.50	\$5.00
Cefco.....	\$3.50	\$4.00	\$7.50			
Franco.....				1.25	2.25	4.00
Permacolor.....				1.65	3.00	5.00

*These prices apply only to the United States*

## SMALL FIXTURE & WIRE CONNECTORS

### Solderless

Insulated Solderless Wire or Fixture Connectors Similar to "Ideal"	
"Marr" "Sherman" "Simplex" "S.R.K." "Wirelets" "Wiremold" Etc.—each	\$ .08
E-Z or Simplex Insulated Solderless Wire or Fixture Connector.....	.03
Non-Insulated Solderless Wire Connectors—2 Screw—All Metal.....	.10

## SET SCREW CONNECTORS

### Round Brass

		Round Brass				
Wire Size		No. 12-14	No. 10	No. 8	No. 6	No. 4
Divided Wall	2 Screws	\$ .06	\$ .08	\$ .09	\$ .10	\$ .14
Hole Thru	4 "	.. 10	.. 12	.. 13	.. 15	.. 18
	2 "	.. 11	.. 13	.. 15	.. 17	.. 20
Wire Size		No. 2	No. 1 1/2	No. 2 1/2	No. 3 1/2	No. 4 1/2
Divided Wall	2 Screws	\$ .15	\$ .26	\$ .32	\$ .50	\$ .80
Hole Thru	4 "	.. 20	.. 24	.. 30	.. 45	.. 60
	2 "	.. 22	.. 28	.. 30	.. 45	.. 60

## SOLDERLESS CONNECTORS

Dossert, Frankel or Penn-Union

	No.	No.	No.	No.				
Size Cond.....	3 to 1	1/0	2/0	3/0	4/0	250,000	300,000	400,000
2 Way L's.....	\$0.75	\$0.80	\$1.00	\$1.20	\$1.40	\$1.65	\$1.90	\$2.50
Cable Taps.....	1.05	1.20	1.40	1.75	2.10	2.40	2.85	3.75
3 Ways & Y's.....	1.05	1.20	1.40	1.75	2.10	2.40	2.85	3.75
Lugs FB Ang.....	.55	.60	.70	.90	1.10	1.20	1.40	1.85

## CORD & MOTOR CONNECTORS

CORD & MOTOR CONNECTORS					
Arrow	Completely		Body Only		Cap Only
	No.	Price	No.	Price	No. Price
Midget Arrotex	8239	\$1.00			
Motor Conn.	RP-8221	.60	8321	\$.55	RP .10
"	RA-8222	.65	8222	.55	RA .15
"	RH-8224	1.20	8224	.75	RH .45
"	RG-8281	1.20	8281	.75	RG .45
"	RE-8335	1.60	8335	1.10	RE .50
<b>Bryant</b>					
Motor Midget	KT-130	.70	130	.65	KT .10
Conn.	KG-103	.90	103	.65	KG .30
<b>GE</b>					
Cord Conn.	1346-1347	.90	1347	.40	1346 .40
"	"	"	1351	.55	2627 .10
"	"	"	2710	.95	2721 .35
"	2715	.65	2716	.55	2717 .10
<b>Hubbell</b>					
Cord Connector	.....	.....	5574	.50	5895 .30
"	6116	.75	6118	.65	5964 .10
"	"	.....	6630	.50	6631 .20
"	6180	.60	6630	.50	6181 .10
"	5818	.75	5574	.50	5420 .25
"	"	.....	7084	.85	7056 .55
"	"	.....	7081	1.10	7092 .75
"	"	.....	6409	1.00	6149 .55
<b>Weber</b>					
Cord Connector	2274	.60	.74	.45	2300 .20
<b>Wirt</b>					
Cord Connector	56	.55			

NOTE: For Attachment Plugs and other caps—See Pages PL-16 & PL-17

**NOTE:** For Attachment Plugs and other caps—See Pages PL-16 & PL-17

## E-SUNDRIES

## EXTENSION CORDS—MADE UP

**With Plug & Socket, but Guards-Lamps & Handles Extra**

Length in Feet	With Lamp Cord and Key Socket No. 18 Twisted	With Reinforced Cord and Key Socket		With Artificial Silk Cord and Key Socket	
		No. 18	No. 16	No. 18	No. 16
4 Foot.....	\$ .75	\$ .80	\$ .85	\$ .80	\$ .85
6 ".....	.80	.90	.95	.90	.95
8 ".....	.85	1.00	1.05	1.00	1.05
10 ".....	.90	1.10	1.20	1.10	1.20
12 ".....	.95	1.20	1.30	1.20	1.30
14 ".....	1.00	1.30	1.45	1.30	1.45
16 ".....	1.05	1.40	1.55	1.40	1.55
18 ".....	1.10	1.50	1.65	1.50	1.65
20 ".....	1.15	1.60	1.75	1.60	1.75
22 ".....	1.20	1.65	1.85	1.65	1.85
24 ".....	1.25	1.75	1.95	1.75	1.95
Length in Feet	With All Rubber Cord and Weatherproof Socket				
	Light		Heavy		
	No. 18	No. 16	No. 18	No. 16	
4 Foot.....	\$1.00	\$1.10	\$1.15	\$1.25	
6 ".....	1.20	1.30	1.40	1.50	
8 ".....	1.35	1.50	1.65	1.75	
10 ".....	1.50	1.70	1.90	2.00	
12 ".....	1.75	1.90	2.15	2.25	
14 ".....	1.90	2.10	2.40	2.50	
16 ".....	2.10	2.30	2.65	2.75	
18 ".....	2.25	2.50	2.90	3.00	
20 ".....	2.40	2.70	3.25	3.35	
22 ".....	2.65	2.90	3.40	3.50	
24 ".....	2.80	3.10	3.65	3.75	

### ELBOWS & BENDS For Rigid Conduit

	Size	1 1/2"	1 3/4"	1"	1 1/2"	1 3/4"
Black.....		\$ .14	\$ .18	\$ .28	\$ .38	\$ .51
Galv.....		.16	.21	.32	.43	.58
	Size	2"	2 1/2"	3"	3 1/2"	4"
Black.....		\$ .83	\$1.35	\$3.58	\$7.87	\$9.10
Galv.....		.95	1.53	4.08	9.00	10.40

## EXPANSION SHIELDS & ANCHORS

(Ackerman—Johnson—Chicago Expansion Bolt  
—Diamond—Dryvin—Packtite—Paine—Star or Similar)

**Screws Not Included.**

Expansive Screw Anchors or Caulking Anchors for Machine Screws or Bolts.		Hammer Drive Anchors With	Nail
Size Screw or Bolt	Price	Size of Shield	Price
6-32 Screw	\$0.06	3/8" x 3/4" Shield	\$0.05
8-32 "	.07	1/2" x 1" "	.06
10-24 "	.08	3/4" x 1 1/4" "	.07
12-24 "	.10	1" x 1 1/2" "	.09
1-4x20 Bolt	.12	1 1/4" x 1 3/4" "	.10
5-16x18 "	.15	1 3/4" x 2" "	.12
3-8x16 "	.18	2" x 2 1/2" "	.14
7-16x14 "	.20	2 1/2" x 3" "	.16
1-2x15 "	.23	3" x 3 1/2" "	.20
5-8x13 "	.30	3 1/2" x 4 1/2" "	.22
		4" x 5" "	.25

### Multi-Size Screw Anchors

		Screw Size			
		5 to 10	8 to 14	16 to 20	16 to 20
Length of Anchor.....		3/4"	1"	1"	1 1/4"
Price Without Screw.....		\$0.04	\$0.05	\$0.06	\$0.08

**LAG SCREW ANCHORS (Diamond or Similar)**

Takes Lag Screw	$\frac{3}{8}"$	$\frac{3}{4}"$	$\frac{5}{8}"$	$\frac{3}{4}"$	$\frac{1}{2}"$
Price Without Lag Screw	\$ .15	\$ .15	\$ .18	\$ .25	\$ .35
Takes Lag Screw		$\frac{3}{4}"$	$\frac{3}{4}"$	$\frac{3}{4}"$	$\frac{1}{2}"$
Price Without Lag Screw		\$ .40	\$ .60	\$ .90	\$1.00

## FUSES

## PLUG FUSES

Standard Plug Fuses—Any Make—\$.07 each or 5 for \$.25  
(Some Manufacturers put these fuses up 4 in a box, in which case they should be retailed at 4 for \$.25.)

**ENCLOSED FUSES, NON-RENEWABLE**

Amps.	Non-Indicating Price Each		Indicating Price Each	
	250 Volts	600 Volts	250 Volts	600 Volts
	Fuse	Fuse	Fuse	Fuse
1 to 30.....	\$.15	\$.35	\$.25	\$.55
35 to 60.....	.25	.50	.40	.85
70 to 100.....	.80	1.15	1.25	1.85
110 to 200.....	1.55	1.95	2.30	3.15
225 to 400.....	4.75	5.45	4.40	6.80
450 to 600.....	4.25	6.15	6.80	9.90
650 to 800.....	8.95	11.15	12.85	17.35

## RENEWABLE FUSES

	Fuses		Links	
Amps.	350 Volts	600 Volts	250 Volts	600 Volts
1 to 30.....	\$.60	\$.10	\$.03	\$.05
35 to 60.....	1.00	1.00	.05	.06
65 to 100.....	2.00	3.00	.08	.10
110 to 200.....	4.00	5.00	.15	.15
225 to 400.....	7.50	11.00	.30	.30
450 to 600.....	11.00	16.00	.60	.60

### FUSE WIRE

Size in Amps.....	14	16	1	3
Price Per Pound.....	\$65.00	\$6.00	\$3.65	\$3.30
Price Per Foot.....	.01	.01	.01	.01
Size in Amps.....	3	5	6	10
Price Per Pound.....	\$2.00	\$1.60	\$1.30	\$1.30
Price Per Foot.....	.01	.01½	.02	.03½
Size in Amps.....	20	25	30	40
Price Per Pound.....	\$1.00	\$1.00	\$1.00	\$1.00
Price Per Foot.....	.04	.05	.07	.08
Size in Amps.....	60	70	80	90
Price Per Pound.....	\$1.00	\$1.00	\$1.00	\$1.00
Price Per Foot.....	.15	.20	.22	.24
Fuse Strip Any Amperage.....\$1.00 per lb.				

## OPEN LINK FUSES

### Small Wire Type

Size in Amps.....	1 to 30 Amps.	35 to 60 Amps.	65 to 100 Amps.
Numbers.....	00-0-1-2-3	2-3-5	8
Price Each.....	\$ .12	\$ .16	\$ .23

### Large Strip Type

Size in Amps.....	25-100	110-200	225-400
Numbers.....	7	7 to 16	10 to 16
Price Each.....	\$ .23	\$ .30	\$ .60

Size in Amps.....	425-600	600-800	800-1500
Numbers.....	10 to 16	25	40
Price Each.....	\$1.10	\$1.85	\$6.95

## STAMPED SHEET METAL LINK FUSES

Type of Link.....	B	C	D	E-F-H-I-L-M
C to C Distance.....	1 3/4	2 3/4	3 3/4	See Catalog
Price Each.....	\$ .11	\$ .11	\$ .18	\$ .30

*These prices apply only to the United States*

Electrical Contracting, December, 1931



## THREADED CONDUIT FITTINGS

**STANDARD TYPES, COVERS EXTRA**  
**"Condulets" "Taplets" "Unilets" "Electrolets" "V. V."**  
**"Adaptilets" Etc.**

Form 7		1/2"	3/4"	1"	1 1/2"	1 3/4"
A		\$ .32	\$ .41	\$ .57	\$ .82	\$1.06
B		.38	.47	.60	1.65	1.98
C		.48	.54	.78	1.24	1.61
CO-COV		.66	.86	.99	1.65	2.11
E		.38	.46	.66	1.06	1.37
F	Form 7	.66	1.06	1.65	2.90	4.29
LB-LF-LL-LR-LBB		.53	.60	.86	1.39	1.85
LFB-LLB-LRB		.33	.60	.86	1.39	1.85
LBL-LBR		.86	1.06	1.25	1.65	2.04
PC-PL		1.85	2.05	2.25	.....	.....
P-T		1.08	1.18	2.38	.....	.....
PX		2.25	2.50	2.77	.....	.....
T All One Size		2.38	2.64	2.90	.....	.....
TA All One Size		.63	.75	1.05	1.61	2.23
TB-TL-TR		.92	.99	1.32	2.05	3.04
U-UB		.63	.75	1.05	1.61	2.23
X All One Size		.13	.71	1.03	1.66	2.23
Gaskets		1.09	1.12	1.39	1.85	2.35
Reducers		.63	.13	.20	.26	.26
Connectors CCT		.20	.20	.26	.40	.63
Unions U. N. Y.		.33	.40	.46	1.45	1.85
		.60	.66	.99	1.58	1.98

Form 7		2"	2 1/2"	3"	3 1/2"	4"
A		\$2.19	\$5.20	\$6.20	\$10.10	\$11.15
B		3.43	5.20	6.95	8.68	10.57
C		3.21	5.95	7.60	11.16	13.64
CO-COV		4.29	6.45	6.90	15.62	16.62
E		2.53	6.20	6.20	10.10	11.15
F	Form 7	6.60	10.17	12.65	22.45	31.00
LB-LF-LL-LR-LBB		3.30	6.20	8.06	13.00	14.88
LFB-LLB-LRB		3.30	6.20	8.06	13.00	14.88
LBL-LBR-LW		3.50	8.12	.....	.....	.....
T All One Size		3.36	6.20	9.30	13.65	16.12
TA All One Size		5.22	.....	.....	.....	.....
TB-TL-TR		3.36	6.20	9.30	13.65	16.12
U-UB		3.95	7.44	9.67	15.62	.....
X All One Size		4.62	7.44	12.40	.....	.....
Gaskets		.33	.50	.50	.62	.62
Reducers		.66	1.24	1.67	2.48	3.40
Connectors CCT		.....	.....	.....	.....	.....
Unions U. N. Y.		3.63	5.89	.....	.....	.....

## COVERS

### For Above

		1½"	¾"	1"	1¼"
Porcelain Covers with Holes.....		\$ .13	\$ .20	\$ .33	\$ .47
Composition " " .....		.26	.40	.68	1.32
" " Blank.....		.40	.53	.79	1.45
Porcelain " For Drop Cord.....		.46	.53	.....	.....
" Weatherproof.....		.21	.33	.....	.....
Metal Covers Blank Sheet Steel.....		.11	.15	.36	.42
" Cast Iron.....		.22	.30	.46	.66
" " with ¼ Nipple.....		.26	.33	.46	.....
" " " ½ ".....		.30	.37	.50	.....
" " " ¾ ".....		.33	.39	.53	.....
		1¼"	2	2½-3"	3½-4"
Porcelain Covers with Holes.....		\$ .63	\$ .79	\$1.06	\$1.19
Composition " " .....		1.45	1.58	2.12	2.30
" " Blank.....		1.58	1.85	4.29	5.94
Porcelain " For Drop Cord.....		.....	.....	.....	.....
" Weatherproof.....		.59	.....	.....	.....
Metal Covers Blank Sheet Steel.....		.59	.74	.99	1.05
" Cast Iron.....		.62	1.19	1.52	1.65
" " with ¼ Nipple.....		.....	.....	.....	.....
" " " ½ ".....		.....	.....	.....	.....
" " " ¾ ".....		.....	.....	.....	.....

### RECEPTACLES & ROSETTES

For Threaded & Threadless Fittings

Plug Receptacles 10 Amp. 2 Pole 250 Watt.					$\frac{1}{2}$	$\frac{3}{4}$	1 <sup>00</sup>
..	..	15	2	125	..	..	..
..	..	20	2	125	..	..	..
..	..	10	3	250	..	..	..
..	..	15	3	250	..	..	..
..	..	20	3	250	..	..	..
Lamp Receptacle 660 Watt with Shade Holder					..	..	..
Cord Rosette					..	..	..

**FS SERIES FOR FLUSH DEVICES**  
Shallow Type Without Covers, Any Make

No. Gangs	No. Pipe	Series	3"	4"	1"
Single Gang	Outlets				
"	One	FS-FSA	\$ .86	\$ .99	\$1.12
"	Two	FSC-FSL-FSR- FSLA-FSS-FSAA	.99	1.19	1.45
"	Three	FSCA-FSCC- FSCF-FST	1.32	1.65	1.91
"	Four	FSX-FSCD	1.58	1.98	2.24
Two Gang	One	FS-FSA	1.58	1.71	1.85
"	Two	FSC-FSS	1.71	1.85	2.05
"	Three	FSD	1.91	2.05	2.18
2 Gang Tandem	One	FS	2.18	2.31	2.44
"	Two	FSC	2.31	2.44	2.57
Three Gang	One	FS-FSA	.....	2.38	2.57
"	Two	FS	.....	2.51	2.71
"	Four	FSD	2.57	2.84	3.04
Four Gang	One	FS-FSA	.....	2.90	3.16
"	Two	FSC-FSSE	.....	3.10	3.30
"	Five	FSD	3.43	3.76	4.10

### COVERS FOR FS FITTINGS

	Description	Single Gang	2 Gang	3 Gang	4 Gang
Metal Cover for Flush or Surface Push Button Tumbler Switches.....		\$ .20	.40	.59	.79
Metal Cast Covers Guarded for Switches.....		.46	.86	1.32	1.85
" " Duplex " Life Cover.....		.33	.66	.	.
" " Single " Life Cover.....		.40	.79	.	.
" " with Brass Nipple.....		.53	1.88	.	.
" " Pilot Lamp Rec. with Jewel.....		.59	.	.	.
" " Iron Vaporproof with Operating Mechanism.....		1.32	.	.	.
" " Brass .....		2.31	3.96	.	.
" Blank Copper Sheet Steel.....		3.80	7.59	.	.
" " Cast.....		.13	.26	.63	.79
Porcelain Cover with Holes.....		.33	.66	.99	1.52
		.26	.	.	.

### COMBINATION COVERS FOR FS SERIES

2	Gang for One Switch and one Sgle. or Duplex Receptacle.....	\$ .66
2	" " " " Bull's Eye with Jewel .....	1.65
2	" " " " One lift cover Receptacle .....	.99

## RECEPTACLES & PLUGS

Type	3 Pole, 250 Volt D. C.	300 Volt A. C.	C. Style 1
Crouse-Hinds or Similar Receptacle	15 amp.	15 amp.	60 amp.
	1½"	1"	1¾"
QEE	\$9.60	\$9.75	\$9.85
QE	9.50	9.60	9.75
AJA	"	"	"
I.B.	"	"	"
CP Watertight Plug	"	"	"
	9.10	9.10	9.10
	11.50	11.50	11.50
	16.85	16.85	16.85

### G & H WITHOUT ADJUSTABLE BAR

Type Crosse Hinds or Similar	5 Amp.			10 Amp.		
	1"	3/4"	1"	3/4"	3/4"	1"
G.....	\$.53	\$.66	\$.99	\$.66	\$.86	\$1.12
GL.....	.50	.73	1.05	.73	.92	1.19
GA-GLA-GT.....	.79	.92	1.25	.92	1.12	1.39
GTA-GX.....	.90	1.12	1.58	1.12	1.32	1.72
GXA.....	1.19	1.32	1.85	1.32	1.52	1.98
H.....	.48	.53	.80	.58	.73	.99
HH.....	.46	.50	.92	.59	.79	1.05
HH.....	.53	.66	.99	.66	.86	1.12
HHC.....	.79	.92	1.25	.92	1.12	1.39
HLC.....	.50	.73	1.05	.73	.92	1.19

110

Crouse Hinds or Similar	1/4"	3/8"	1"
G.....	\$.92	\$.99	\$.12
GL.....	.99	1.12	1.52
GA-GLA-GT.....	1.19	1.32	1.72
GTA-GX.....	1.39	1.58	2.11
GXA.....	1.58	1.85	2.38
H.....	.79	.86	1.19
HA.....	.86	.92	1.32
HH.....	.92	.99	1.52
HHC.....	1.19	1.32	1.72
HLA.....	.99	1.12	1.52

**G & H WITH ADJUSTABLE BAR**

	Crouse Hinds or Similar			8 Amp.			10 Amp.		
	1/4"	3/8"	1"	1/4"	3/8"	1"	1/4"	3/8"	1"
GL.....	.73	.86	1.10	.86	\$1.06	1.32	.86	\$1.06	1.32
GA.....	.79	.92	1.25	.92	1.12	1.30	.92	1.12	1.30
GA-GX.....	1.12	1.12	1.32	1.12	1.32	1.32	1.12	1.32	1.32
GXA-GX.....	1.19	1.32	1.78	1.32	1.52	1.91	1.32	1.52	1.91
GXA.....	1.39	1.52	2.05	1.52	1.72	2.18	1.52	1.72	2.18
H.....	.50	.73	1.05	.73	.92	1.19	.73	.92	1.19
HA.....	.66	.79	1.12	.79	.99	1.25	.79	.99	1.25
HA.....	.73	.86	1.10	.86	1.05	1.30	.86	1.05	1.30
HHC.....	.99	1.12	1.45	1.12	1.32	1.58	1.12	1.32	1.58
HLC.....	.79	.92	1.25	.92	1.12	1.36	.92	1.12	1.36

## Hinda

Crouse Hinds or Similar	30 Amp.		
	1/2"	3/4"	1"
G.	\$1.19	\$1.25	\$1.58
GL	1.25	1.39	1.78
GA-GLA GT.	1.45	1.58	1.98
GTA-GX.	1.65	1.85	2.38
GXA	1.85	2.11	2.64
H.	1.05	1.12	1.45
HA	1.12	1.19	1.58
HM	1.19	1.25	1.58
HHC	1.45	1.58	1.98
HHA	1.25	1.39	1.78

### COVERS FOR G & H SERIES

Description	For G & H Fittings Without Adjustable Bar		For G & H Fittings With Adjustable Bar 5 & 10	
	5 Amp.	10 Amp.	20 Amp.	Amp. 20 Amp
Porcelain Cover with Wire Holes . . .	\$ .26	\$ .53	\$ .53	\$ .20 \$ .46
Blank Sheet Steel Cover . . . . .	.20	.26	.38	.13 .46
" Cast " " " " " "	.33	.40	.53	.26 .46
Sheet Steel with 1/2" Brass Nipple . . .	.33	.40	.46	.26 .40
" " " 1/4" " " " "	.40	.46	.53	.33 .46
" " " 3/8" " " " "	.46	.53	.69	.40 .53
" " " 1/2" " " " "	.53	.69	.66	.46 .59
Receptacle Covers No Shadeholder . .	.66	.66	.....	.....
" With " " " " " "	1.05	.....	.....	.....

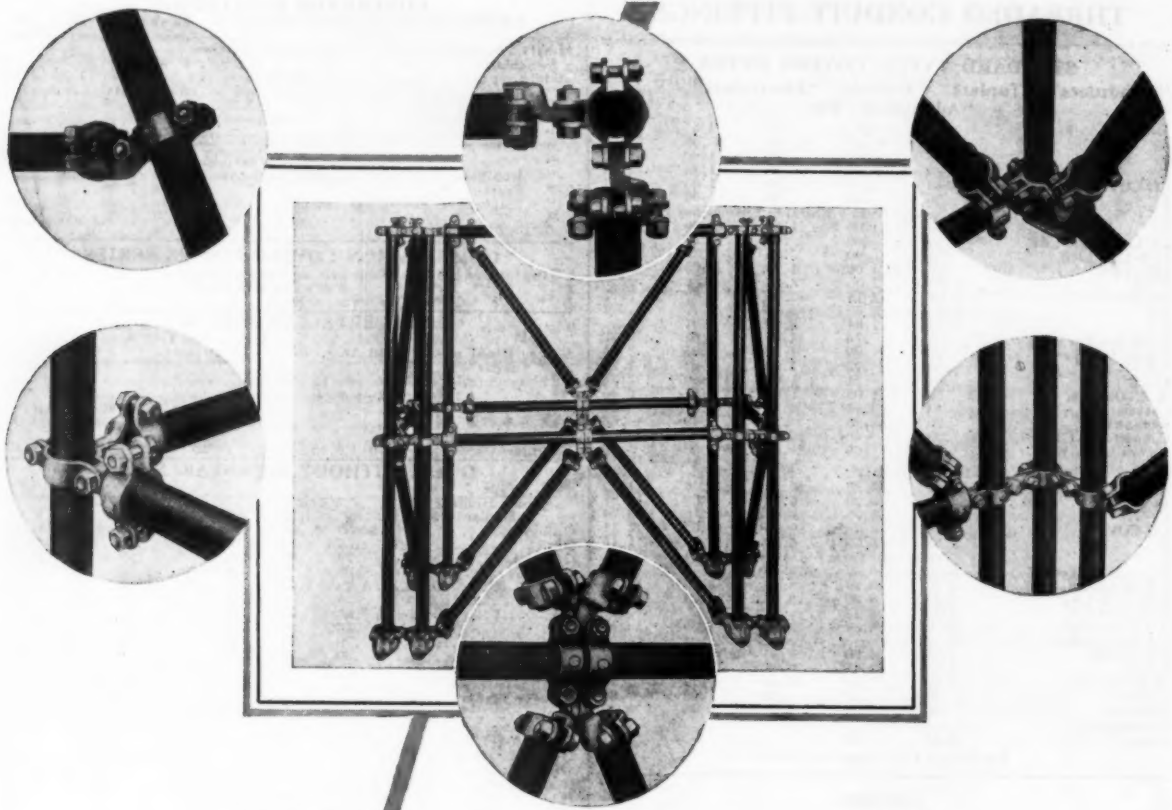
## DEVICES FOR G & H SERIES

Lamp Receptacles one piece with or without Shadeholder Groove.....	\$ .33
"                "                two                "                "                "	.60
"                "                "                without                "                "	.59
Cord Rosette Porcelain.....	.63
"                Composition.....	.60

## J & K SERIES WEATHERPROOF

	1/4"	3/4"	1"
A-JB-JU.....	\$.79	\$.99	\$1.30
L.....	.92	1.12	1.52
T.....	1.12	1.25	1.30
X.....	1.25	1.30	1.52
K.....	1.30	1.52	1.73
K.....	.86	.86	1.21
KA-KB-KC-KD.....	.79	.99	1.30

*These prices apply only to the United States*



## With 6 Fittings, Pipe Frameworks of Every Design Can Be Fabricated

**I**T is no longer necessary to stock a large variety of pipe fittings for constructing outdoor pipe frameworks. Six different fittings, and one size of bolt, are all that is needed.

Further, only one size pipe need be stocked, for with these new G-E fittings, any desired strength for columns or horizontal supports can be obtained by using two or more standard 1½-inch pipes in place of pipe of larger size.

These fittings are made of malleable iron, hot-dip galvanized; can be quickly and easily assembled; and are ribbed to prevent slippage. All struts, or bracing members, are connected to columns through a single bolt, which acts as a hinge joint.

This hinge joint breaks the continuity of a section, thereby eliminating bending stresses in the connection; permits development of the full strength of the pipe within the limits of deflection; and assures a connection equal in strength to the shearing value of the bolt.


For complete information write to the nearest G-E office or to the General Electric Company, Schenectady, N. Y. Ask for a copy of GEA-1360.

  
GENERAL ELECTRIC  
SWITCHGEAR

500-64



## BUSINESS NOW!



Hold fast to your selling and working instincts. Basically what was good practice in winning jobs, still is. Every man must change to meet changing conditions and the wiring jobs you do now vary in kind, but quality is more necessary than ever. The quality of  Panelboards and Service have not changed.



## Frank Adam

### ELECTRIC COMPANY

ST. LOUIS

The  man is near you now. If you do not send for him and use him and the  organization we both lose. Act now!

Albuquerque, N. M.  
General Engineering & Equip. Co.  
108 N. Third St.  
P. O. Box 76

Atlanta, Ga.  
L. A. Crow,  
64 Cone St., N. W.

Baltimore, Md.  
Wolfe-Mann Mfg. Co.  
312 S. Hanover St.

Boston, Mass.  
J. J. Cassidy,  
231 Congress St.

Buffalo, N. Y.  
Ralph E. Jones,  
127 Saranac Ave.

Chicago, Ill.  
Major Equipment Co., Inc.  
4603 Fullerton Ave.

Cincinnati, Ohio  
E. F. Schurig,  
105 East Pearl St.

Cleveland, Ohio  
Frank Reake,  
684 The Arcade

Dallas, Texas  
R. S. Wakefield,  
1814 Allen Bldg.

Denver, Colo.  
Fred E. Staible, Inc.  
2356 Blake St.

Detroit, Mich.  
H. H. Norton,  
2663 Wabash Ave.

Kansas City, Mo.  
Robert Baker,  
19 E. 14th St.

Los Angeles, Calif.  
E. Zinsmeyer,  
1127 S. Wall St.

Memphis, Tenn.  
C. B. Rutledge,  
203 Monroe Ave.

Minneapolis, Minn.  
Leo H. Cooper,  
422 Builders' Ex. Bldg.

New Orleans, La.  
W. J. Keller,  
203 Natches Bldg.  
Magasine & Natches Sts.

New York  
Fred G. Kraut,  
419 W. 54th St.  
New York City

Omaha, Nebr.  
E. J. Fleming,  
213 S. 12th St.

Philadelphia, Pa.  
W. A. MacAvoy, Jr.,  
244 North 10th St.

Pittsburgh, Pa.  
W. A. MacAvoy, Jr.,  
Dist. Mgr.  
R. E. Thomas,  
Rea. Mgr.  
P. O. Box 1349

St. Louis, Mo.  
O. H. Rottman,  
3650 Windsor Place

San Francisco, Calif.  
Lee Van Atta,  
340 Fremont St.

Seattle, Wash.  
R. E. Dryer,  
91 Connecticut St.

Tulsa, Okla.  
P. E. Ebercole,  
214 S. Victor St.

Toronto, Can.  
Amalgamated Elec. Co., Ltd.  
Gen. Sales Office,  
372 Pape Ave.

Vancouver, Can.  
Amalgamated Elec. Co., Ltd.  
Grandville Island  
Winnipeg, Man., Can.  
Amalgamated Elec. Co., Ltd.  
677 Notre Dame Ave.

Calgary, Alberta  
Amalgamated Elec. Co., Ltd.  
1301-11th Ave., E.

Hamilton, Ont.  
Amalgamated Elec. Co., Ltd.  
18 Mary St.  
Montreal, Can.  
Amalgamated Elec. Co., Ltd.  
1006 Mountain St.



THEY KEEP A-RUNNING



*1/6 Horse Power Century Type SP Split Phase Induction Motor*

## SPLIT PHASE MOTORS

Century Split Phase Motors—built in Open, Enclosed, Vertical and Flange Mounting types—are particularly adapted to the operation of Unit Heaters, Fans, Blowers, Oil Burners, Washing Machines, Small Tools and similar apparatus . . . Their design and construction contribute to the ruggedness of the machines on which they are mounted . . . The vital parts of the motor are protected from falling material or dirt and dripping water . . . Bearings are made from Phosphor Bronze Castings. The Century Wool Yarn System of Lubrication, furnished as standard equipment, assures at least one year's continuous, 24-hour per-day operation without reoiling.

Built in standard sizes from 1/20 to 1/4 horse power.

### CENTURY ELECTRIC COMPANY

1806 PINE STREET • ST. LOUIS, MO.

*40 U. S. and Canadian Stock Points and More Than 75 Outside Thereof*

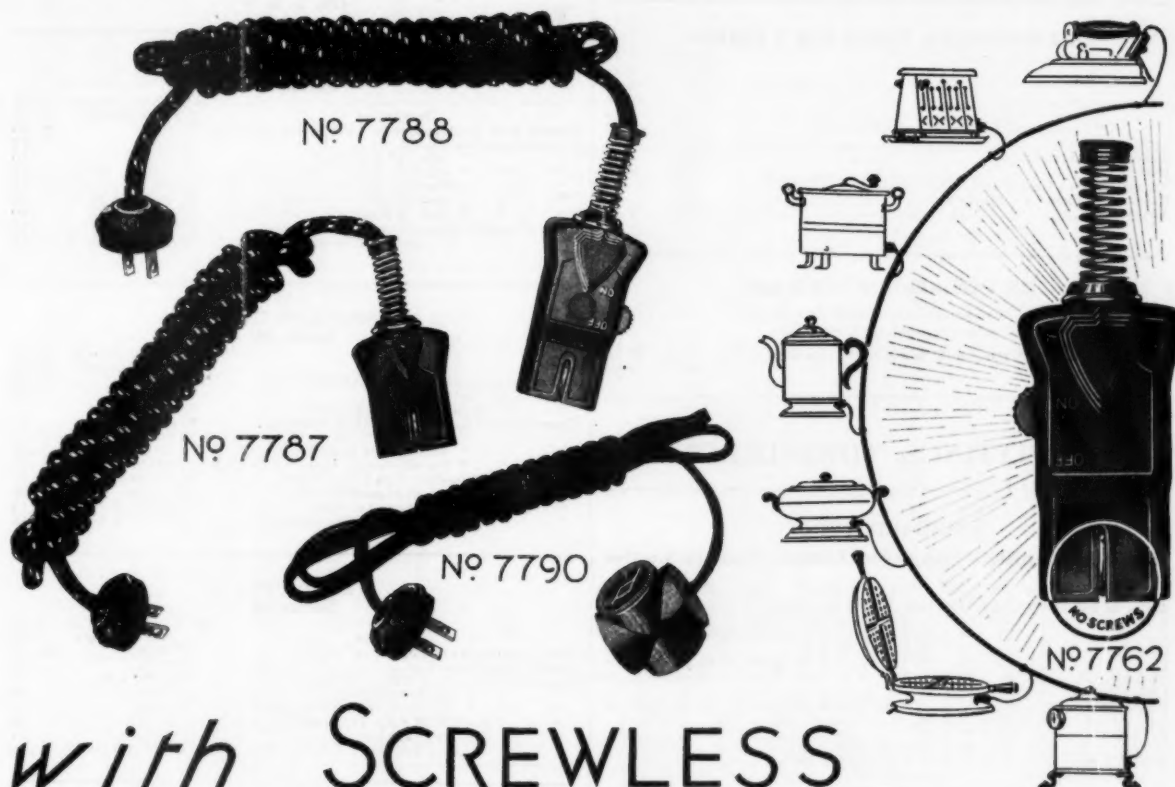
SINGLE PHASE,  
THREE PHASE,  
AND DIRECT  
CURRENT MOTORS

*Century*  
**MOTORS**

MOTOR GENERA-  
TOR SETS, ROTARY  
CONVERTERS, FANS  
AND VENTILATORS

**FOR MORE THAN 27 YEARS AT ST. LOUIS**

# H & H HEATER Cord Sets



## with SCREWLESS HEATER PLUG

These Cord Sets make lasting connections with heating appliances. . . Assembled with finest 3000-cycle-test cord:—a 6 or 8 foot length of extra long life under "kitchen conditions" or elsewhere. BAKELITE plug cap and BAKELITE SCREWLESS switch plug make an altogether new-standard outfit from one end to the other. New sales-appeal!

New SCREWLESS heater plugs stay together and stay usable. No screws to loosen by alternate heating and cooling. Plug sections held together by spring clips; self-adjusting to temperature changes, yanks and twists. Cord Sets can be furnished with finger-grip Bakelite Cap or finger-grip rubber cap at a slight additional cost.

**HART & HEGEMAN DIVISION**  
THE ARROW-HART & HEGEMAN ELECTRIC CO.  
HARTFORD, CONN. MAKERS OF ELECTRIC SWITCHES SINCE 1890

### Fittings, Conduit

## DEVICES FOR J K SERIES

Lamp Receptacle S. H. Groove.....	\$0.60
"          No S. H. Groove.....	.63
Plug Receptacle 10 & 15 Amp.....	.86
"          20                ".....	.86
"          10               3-wire.....	.92
Cord Rosette.....	.46
Blank Cast Cover.....	.40

**SERIES V VAPORPROOF TYPE**

Adapti Crouse-Hinds or Similar

**Prices include Globe & Guard**

		Form 75		
		$\frac{1}{2}''$	$\frac{3}{4}''$	$1''$
V-VA & VDA as above	.....	\$5.60	\$5.65	\$5.70
VC & VL	.....	5.70	5.80	5.90
VE-VG & VT	.....	5.90	6.00	.....
VX	.....	6.00	6.25	6.45
VF	.....	6.10	6.40	.....
VD & VJ	.....	6.40	6.50	6.60

		Form 200		
		$\frac{1}{2}''$	$\frac{3}{4}''$	$1''$
V-VA & VDA as above	.....	\$6.70	\$6.75	\$6.80
VC & VL	.....	6.80	6.90	7.00
VE-VG & VT	.....	6.90	6.90	7.00
VX	.....	7.05	7.20	7.35
VF	.....	7.15	7.25	.....
VD & VJ	.....	7.35	7.45	7.55

### ACCESSORIES & PARTS FOR V SERIES

	Form	Price
	75	200
Globes only, clear glass.....	\$1.05	\$1.05
"    "    opal.....	1.45	2.25
"    "    green, blue or orange.....	2.45	3.10
"    "    ruby.....	3.10	3.85
Guards Cast Aluminum.....	2.40	2.95
Half Shades.....	1.60	2.30
Receptacle with Gasket.....	.85	.85
Reflector Holders Cast Aluminum.....	3.65	4.65
Adaptor.....	1.00	1.20

## GS VAPORPROOF FIXTURES

Crouse-Hinds Cat. 2200 Page 56

Adapti Bulletin 107 E Page 19B

Pendant or Bracket Fixture with Recep. Globe and Guard Form	75....	\$7.55
	200....	8.45

## FITTINGS, THREADLESS

## STANDARD TYPES

**"Kondur" "Adaptilets" "Appleton" Crouse-Hinds or Similar**

Size—	½"	¾"	1"	1¼"	1½"	2"	2½"	3"	3½"	4"
A Covers Extra.....	40.4480	48.800	7981.2381	6533.256	6.958	8.358	12.908	14.90		
B.....	50.00	56.80	2.05	2.55	3.55	6.95	9.10	11.50	19.60	
C.....	70.00	1.20	2.20	2.30	2.90	4.00	12.00	16.75	21.10	
CO.....	50.00	1.20	1.44	2.35	3.30	6.40.				
E.....	50.00	63.88	1.45	1.95	3.90	6.95	8.35	12.90	14.90	
LB-LB-LRR-L.....	76.92	92.12	2.32	2.20	3.05	5.40	9.65	12.40	18.60	22.30
LRL-LRR.....	1.19	1.57	2.18.							
T&TB All 1 Size.....	9.88	1.27	1.74	2.85	4.00	6.55	11.40	15.80	22.00	27.30
TA.....	1.30	1.27	2.24.							
TL-TR.....	.98	1.30								
U-UB.....	.86	1.05	1.50	2.50	3.40	4.10				
X All 1 Size.....	1.25	1.72	2.30	4.22	6.05	9.90.				

### TYPE UCC AND UCB

Unions Thick Walls	\$ .37	\$ .53	\$ .79	\$ 1.19	\$ 1.65	\$ 3.30	\$ 5.30	\$ 7.90	\$ 10.50	\$ 15.84
Thin	.26	.40	.66	1.05	1.39	2.77	.....	.....	.....	.....
Conn. Thick	.26	.37	.76	.92	.....	.....	.....	.....	.....	.....
Thin	.22	.33	.50	.....	.....	.....	.....	.....	.....	.....
UCT Adapter	.05	.08	.13	.....	.....	.....	.....	.....	.....	.....

## TYPE FS SERIES

### For Flush Devices

Type	1/4"	One Gang 1/2"	1"	Two Gang 3/4"	Three Gang 1"	Four Gang 1 1/4"	
FS	\$0.90	\$1.10	.....	\$1.72	\$1.91	\$2.57	\$3.10
FSA	.90						
FSC	1.25	1.52	\$1.91	1.98	2.18	2.90	3.50
FSD	.....	.....	.....	2.24	2.57	.....	.....
FSL-FSR	1.25	1.52	.....	.....	.....	.....	.....
FSA	1.25						
FSC	1.65	2.18	2.57	.....	.....	.....	.....
FSX	2.04	2.84	3.23	.....	.....	.....	.....

## TYPE G-H SERIES

		With Adjustable Bar	Without Bar
G	Form 5	$\frac{1}{2}$ 1.20	$\frac{1}{2}$ \$0.77
		$\frac{1}{4}$ 1.20	1.00
	Form 10	$\frac{1}{2}$ 1.00	.90
		$\frac{1}{4}$ 1.40	1.20
GL	Form 5	$\frac{1}{2}$ 1.03	.85
	10	$\frac{1}{4}$ 1.16	.95
GT	Form 5	$\frac{1}{2}$ 1.36	1.14
		$\frac{1}{4}$ 1.60	1.45
H	Form 5	$\frac{1}{2}$ .72	.52
		$\frac{1}{4}$ .90	.70
	Form 10	$\frac{1}{2}$ .85	.66
		$\frac{1}{4}$ .95	.85

## TYPE J-K SERIES

J	$\frac{1}{2}$ "	\$1.05
	$\frac{3}{4}$ "	1.33
K	$\frac{1}{2}$ "	.70

**Note.**—Threadless Fittings for Rigid Conduit and Metallic Tubing (Thin Wall) are the same price.

Covers, Gaskets and Wiring Devices same price as Threaded, on page PL-11 and 12.

## REDUCING BUSHINGS

	Large End	3"	1"	1 1/4"	1 1/2"	2"
Small End	1 1/2"	\$0.38	\$0.50	\$0.67	\$0.75	\$0.99
"	1"	...	.57	.71	.84	1.12
"	3/4"	...	...	.76	.88	1.21
"	1 1/4"	...	...	...	1.07	1.35
"	1 1/2"	...	...	...	...	1.43

**FITTINGS, SPRAGULETS, WIRELETS  
OR T & B**

**BRANCH TYPE**

Series 48

Description	G.E., Steel City or T & B Numbers	Price Each
Branch Box Rectangular for $\frac{1}{2}$ & $\frac{3}{4}$ " Conduit....	SP-48241	\$0.25
Cover Metal Flat Closed.....	SP-48C1	.10
" " " " with $\frac{1}{2}$ " Knockout.....	SP-48C8	.10
" " " " Pendant Type with $\frac{1}{2}$ " Bushing..	SP-48C3	.12
" " " " Pendant Type with $\frac{3}{4}$ " Bushing..	SP-48C11	.15
" " " " with $\frac{1}{2}$ " Male or Female Nipple..	SP-48C22 & 23	.30
" " " " with $\frac{3}{4}$ " Male or Female Nipple..	SP-48C24 & 25	.40
Cover Porcelain with one or two wire Holes.....	SP-48C75 & 76	.14
" " " " three or four wire Holes.....	SP-48C77 & 78	.15

**SHALLOW TYPE**

Series 14

Description	G.E., Steel City or T & B Numbers	Price Each
Body Octagonal Shape for $\frac{1}{8}$ " or $\frac{3}{16}$ " Conduit.....	SP-14241	\$0.30.
Cover Metal Flat Closed.....	SP-14C1	.10
" Raised with $\frac{1}{8}$ " Knockout.....	SP-14C7	.10
Cover Metal Flat Pendant with $\frac{1}{8}$ " Bushing.....	SP-14C8	.12
" " " "	SP-14C11	.16
" " with $\frac{1}{8}$ or $\frac{3}{16}$ Male Nip.....	SP-14C22-24	.18
" For all surface Mounted Devices.....	SP-14C25	.20
" Raised for Sign Receptacles.....	SP-14C31-34-35-36	.12
" Flat for all Flated Devices.....	SP-14C89	.35
Porcelain with one or two holes.....	SP-14C75 & 76	.15
" Three or Four holes.....	SP-14C77 & 78	.15

### DEEP TYPE

Series 34

Description		G. E., Steel City or T & B Numbers	Price Each
Body Deep Octagonal Shape $\frac{1}{4}$ " & $\frac{3}{4}$ "		SP-34461	\$0.45
Cover Metal Blank Flat		SP-34481	.14
Cover Metal For Push Button Switch		SP-34483	.14
" " " Single Receptacle		SP-34485	.14
" " " Standard Duplex Receptacle		SP-34487	.14
" " " For GE 80 AMP. Polarized Plug Recept.		SP-34493	.16
" " " Tumbler Switches		SP-34494	.18
" " " Hubbell and H&H Tumbler Switches		SP-34495	.18

## COUPLINGS

SP-1410 Complete Coupling for 1½" Conduit.....	Price \$.15
SP-1420 " " " 1½" ".....	.25

### FITTINGS, ENTRANCE OR SERVICE

### "ADAPTI"

Ent. Ells with Cov. Ser. 1100.....	1½"	¾"	1"	1¼"
" Fitt. with Cov. Ser. 2700.....	\$0.35	\$0.40	\$0.50	\$0.55
Angle Ent. Fitt. with Cover Ser. 2700...	.40	.45	.60	.75
Signal Ent. Caps No. 2810-2811.....	.45	.50	.60	.95
	.75	.....	.....	.....
	1½"	2"	2½"	3"
Ent. Ells with Cov. Ser. 1100.....	\$1.50	\$3.00	.....	.....
" Fitt. with Cov. Ser. 2700.....	1.70	2.95	.....	.....
Angle Ent. Fitt. with Cov. Ser. 2700.....	1.80	3.00	6.35	7.20
Signal Ent. Caps No. 2810-2811.....	.....	.....	.....	.....

*These prices apply only to the United States*

Electrical Contracting, December, 1931



## FITTINGS, ENTRANCE OR SERVICE—Continued

## "APPLETON"

	1/2"	3/4"	1"	1 1/4"
FEB Elbow with Cov. 1700 & 1900.....	\$ .30	\$ .35	\$ .40	\$ .65
FB Elbow with Cov. 1713 to 16.....	.35	.50	.60	.....
FC End Fitt. with Cov. 1723-33-43.....	.20	.25	.30	.....
AY Angle Fitt. 1950 to 54.....	.50	.55	.70	1.85
LAY End Fitt. with Cov. 1790 to 94.....	.30	.35	.45	1.80
MF Reversible Fitt. 3200-3250.....	.45	.55	.75	1.30

## "BEND HICKS"

	1/2"	3/4"	1"	1 1/4"
Bend Hicks Galvanized.....	\$ .50	\$ .60	\$ .65	\$ 1.75
	1 1/2"	2"	2 1/2"	3"
Bend Hicks Galvanized.....	\$ 2.15	\$ 4.10	\$ 6.60	\$ 8.25

## "CAP-SWIVEL-LET"

	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
"A" Inside Work #1010 to 1064.....	\$0.20	\$0.25	\$0.30	\$0.55	\$0.85	\$1.30
"BW" Threadless Fitt. 4112-4134.....	.45	.50	.75	.....	.....	.....
"BW" Threaded Fitt. 2112-2124.....	.35	.45	.....	.....	.....	.....
"FW" Outside Work 1412-1464.....	.40	.50	.65	1.05	1.80	3.00
"LB" Service Entrance 3110-3130.....	.50	.55	.65	.....	.....	.....
Type "AM" for Nipple 1/2" Long.....	\$0.20	For Nipple 1 1/4" Long.....	\$0.25	.....	.....	.....
Type "BXA" for 1600 to 1613.....	.20	From 1614-1624.....	.30	.....	.....	.....
From 1632-1634.....	.35	.....	.....	.....	.....	.....

## "CONDULETS"—Form 6

	1/2"	3/4"	1"	1 1/4"
F Type Ent. Fitt. with Porc. Cov.....	\$ .30	\$ .35	\$ .45	\$ .70
LB Type Ent. Fitt. with Metal Cov.....	.35	.40	.45	.90
	1 1/2"	2"	2 1/2"	3"
F Type Ent. Fitt. with Porc. Cov.....	\$ 1.70	\$ 2.95	.....	.....
LB Type Ent. Fitt. with Metal Cov.....	1.55	4.10	.....	.....

## "ELECTROLETS"

	1/2"	3/4"	1"	1 1/4"
FB Angle Fitt. with Cov. 713-33.....	\$ .40	\$ .45	\$ .50	\$ .80
KA End Fitt. with Cov. 1013 to 43.....	.15	.20	.25	.35
SLB Elbow Fitt. with Cov. 1 to 4.....	.40	.45	.50	.90
Y Capped Elbow Y1 to 5.....	.40	.50	.60	1.65
	1 1/2"	2"	2 1/2"	3"
FB Angle Fitt. with Cov. 713-33.....	\$ 1.90	\$ 3.00	\$ 6.60	\$ 8.50
KA End Fitt. with Cov. 1013 to 43.....	.....	.....	.....	.....
SLB Elbow Fitt. with Cov. 1 to 4.....	.....	.....	.....	.....
Y Capped Elbow Y1 to 5.....	.....	.....	.....	.....

## "GENERAL ELECTRIC"

	1/2"	3/4"	1"	1 1/4"
With Covers				
Ent. Caps Series 1525 to 1534.....	\$ .35	\$ .40	\$ .50	\$ .80
Capped Elbow Series 1470 to 1472.....	.40	.50	.60	.....
Capped Elbow Series 1483 to 1484.....	.....	.....	.....	1.65
Insulets Series 1610 to 1612.....	.20	.25	.30	.....
Insulets Angle Series 1640 to 1642.....	.30	.40	.50	.....
Entrance Ells 1490 to 1495.....	.40	.45	.55	1.00
	1 1/2"	2"	2 1/2"	3"
With Covers				
Ent. Caps Series 1525 to 1532.....	\$ 1.75	\$ 2.95	\$ 6.60	\$ 8.45
Capped Elbow Series 1470 to 1472.....	.....	.....	.....	.....
Capped Elbow Series 1483 to 1484.....	2.05	.....	.....	.....
Insulets Series 1610 to 1612.....	.....	.....	.....	.....
Insulets Angle Series 1640 to 1642.....	.....	.....	.....	.....
Entrance Ells 1490 to 1495.....	1.55	3.00	8.35	10.50

## GEE-VEE

	1/2"	3/4"	1"	1 1/4"
F Service Cap Series 6000.....	\$ .35	\$ .40	\$ .50	\$ .75
B " " " 16000.....	.45	.50	.70	1.75
F Pipe " " 1000-1310.....	.40	.50	.75	.85
B " " " 2000 & 2100.....	.40	.45	.65	.75
FB Universal " 3000.....	1.00	1.25	1.65	2.75
Weathercap " 40122.....	.30	.30	.....	.....
Service Elbow " 19000.....	.40	.45	.50	.95
Endo Terminal Series 90000.....	.15	.20	.25	1.05
Endo for Armored Cable 31143.....	.25	.35	.50	.....
No. 14-2 or No. 12-3 Wire.....	.20	.....	.....	.....
Endo for Armored Cable	.....	.....	.....	.....
Series 30000. Nos. 14 and 12 wire, \$1.15; No. 10 wire, \$3.30; No. 6 wire, \$4.45	.....	.....	.....	.....
SEG Service Elbow Series .400-1/4x1/2, \$7.10; 1/2x1/2, \$1.15; 1/2x1/4, \$1.75	.....	.....	.....	.....

	1 1/2"	2"	2 1/2"	3"
F Service Cap Series 6000.....	\$ 1.90	\$ 3.35	\$ 7.55	\$ 9.20
B " " " 16000.....	1.90	3.35	7.60	9.25
F Pipe " " 1000-1310.....	1.20	1.75	3.00	4.15
B " " " 2000 & 2100.....	1.05	.....	.....	.....
FB Universal " 3000.....	3.75	5.40	9.50	12.70
Weathercap " 40122.....	.....	.....	.....	.....
Service Elbow " 19000.....	1.75	3.60	.....	.....
Endo Terminal " 90000.....	1.40	2.40	4.55	7.40

These prices apply only to the United States

Electrical Contracting, December, 1931

## "TAPLETS"

	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
AR End Fitt. with Bushing.....	\$ .40	\$ .55	\$ .70	\$ .90	\$ 1.30	\$ 1.70	\$ 2.30	\$ 3.60
BF Angle Fitt. with Covers.....	.35	.55	.65	1.20	.....	.....	.....	.....
FA End Fitt. with Covers.....	.15	.20	.....	.....	.....	.....	.....	.....
FB End Fitt. with Covers.....	.30	.45	.50	.80	1.70	2.05	6.25	7.65
FF Service Fitt. with Covers.....	.35	.40	.50	.80	1.70	2.05	6.25	7.65
FH Service Fitt. with Covers.....	.85	1.05	1.60	1.90	3.05	4.90	11.50	12.65
SE Service Elbow with Covers.....	.95	1.10	1.25	1.90	2.50	4.20	8.45	9.80

## "T &amp; B" (Thomas &amp; Betts)

Ent. Cap 1525-32 with Cover.....	\$0.30	\$0.35	\$0.45	\$0.70	\$1.75	\$3.35	\$6.20	\$0.30
Cap. Elbow 1480-84 with ".....	.45	.50	.60	1.70	2.25	.....	.....	.....
Ent. " 1490-97 " " ".....	.40	.45	.55	1.00	1.75	3.00	6.95	8.75
Insulets 1610-11-12 " " ".....	.15	.20	.25	.....	.....	.....	.....	.....
Angle Insulets 1640-1-2 with Cover.....	.30	.45	.60	.....	.....	.....	.....	.....
Cable " 2000 with Cover.....	.15	.....	.....	.....	.....	.....	.....	.....
Ent. Caps No. 5525-28 for Thinwall.....	.50	.65	.80	1.25	.....	.....	.....	.....
Ell No. 5490-95 " " ".....	.80	.90	1.30	3.00	4.10	6.70	.....	.....

## "V. V."

	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
Type 2 Term. Fitt. with Cov.....	\$ .60	\$ .80	\$ 1.05	\$ 1.65	\$ 2.15	\$ 3.85	.....	.....
Type 6 Term. Fitt. with Bush.....	.40	.55	.70	.90	1.30	1.70	2.30	5.60
Type 9 Term. Fitt. with Cov.....	.70	1.05	1.40	2.80	4.20	7.00	12.65	15.45
F with Porc. Cover.....	.40	.45	.60	.95	1.60	2.75	6.95	8.55
FAB with Porc. Cover.....	.25	.40	.45	.85	1.15	2.35	3.80	5.35
FCBX with Cover.....	.15	.20	.25	.....	.....	.....	.....	.....
FL with Cast Cover.....	.40	.55	.65	1.15	1.35	2.45	.....	.....
Y Bend Hick.....	.50	.60	.65	1.75	2.15	4.10	.....	.....

## FITTINGS, "ADAPTI"

## ROUND "ADAPTI" BOXES

Series Numbers	Style	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
No. 2900 to 2903..	1 Back Outlet	\$ .40	\$ .46	\$ .60	\$ 1.05	\$ 1.80	\$ 2.40
No. 3100 to 3105..	" Side "	.40	.46	.60	1.05	1.80	2.40
No. 3100T & 3101T	" " "	.....	.....	.....	.....	.....	.....
Threadless	" " "	.48	.55	.....	.....	.....	.....
No. 3170 to 3175..	" " "	.46	.53	.66	1.15	1.85	2.45
No. 3200 to 3205..	2 " " "	.48	.55	.73	1.25	2.11	2.70
No. 3200T & 3201T	" " "	.....	.....	.....	.....	.....	.....
Threadless	" " "	.60	.67	.....	.....	.....	.....
No. 3270 to 3275..	" " "	.60	.67	.93	1.40	2.25	2.85
No. 32170 to 32175..	" " "	.53	.60	.85	1.34	2.20	2.80
No. 3300 to 3305..	3 " " "	.64	.75	.98	1.60	2.65	3.00
No. 3300T to 3305T	" " "	.....	.....	.....	.....	.....	.....
Threadless	" " "	.80	.92	.....	.....	.....	.....
No. 33170 to 33175..	" " "	.70	.82	1.05	1.70	2.70	3.05
No. 3400 to 3405..	4 " " "	.90	1.00	1.20	1.85	2.85	3.30
No. 3500 to 3705..	2 " " "	.53	.60	.73	1.40	2.25	3.30
No. 3800 to 3805..	" " "	.53	.60	.80	1.40	2.25	3.30
No. 3900 to 4105..	3 " " "	.80	.93	1.05	1.75	2.85	3.95
No. 4900 to 5005..	4 " " "	.93	1.05	1.32	1.90	3.50	4.65

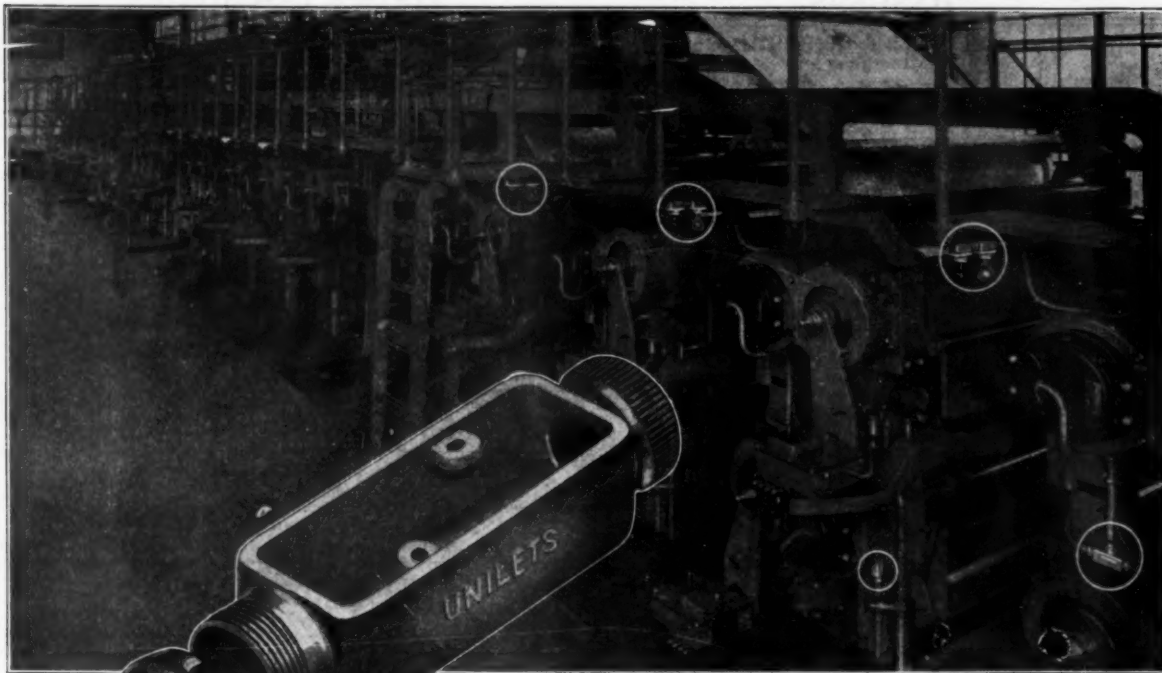
## PARTS For Above Boxes

Series No.	Description	1/2"	3/4"	1"
500-501-502	Base Only	\$ .27	\$ .27	\$ .54
500X-501X	Extension Ring	.27	.27	.40
501A	Base Concealed to Expd.	.66	.66	.66
9500	" with Tapped Boss	.33	.33	.....
510 to 512	Base	.40	.40	.80
520 to 522	"	.27	.27	.52
30 to 35	Metal Side Plates	.14	.14	.20
40 to 42	Insulated Side Plates	.16	.16	.33
50 to 54	Arm. Flex. Side Plates	.33	.40	.53
60 to 65	Angle Outlet	.16	.22	.42
70 to 75	Elbow Outlet	.22	.29	.50
90 to 93	Connecting Outlet	.26	.....	.33
100 & 101	Straight for No. 500 Base	.16	.22	.....
110 to 113	" " No. 501 "	.26	.33	.42
120 to 125	" " No. 502 "	.46	.53	.66
130 to 135	" " No. 503 "	1.05	1.32	1.60
140 to 145	" " No. 504 "	2.65	3.05	3.45
300 & 301	Threadless Outlet	.30	.25	.....
310 & 311	" " "	.33	.40	.....
Series No.	Description	1 1/2"	2"	2 1/2"
500-501-502	Base Only	\$ .54	\$ 1.08	\$ 1.08
500X-501X	Extension Ring	.40	.....	.....
501A	Base Concealed to Expd.	.66	.....	.....
9500	" with Tapped Boss	.....	.....	.....
510 to 512	Base	.80	1.60	1.60
520 to 522	"	.52	1.08	1.08
30 to 35	Metal Side Plates	.26	.38	.58
40 to 42	Insulated Side Plates	.33	.66	.66
50 to 54	Arm. Flex. Side Plates	.66	.....	.....
60 to 65	Angle Outlet	.48	.92	1.05
70 to 75	Elbow Outlet	.55	1.00	1.12
90 to 93	Connecting Outlet	.....	.40	.40
100 & 101	Straight for No. 500 Base	.....	.....	.....
110 to 113	" " No. 501 "	.48	.....	.....
120 to 125	" " No. 502 "	.80	.92	1.05
130 to 135	" " No. 503 "	1.85	2.10	2.40
140 to 145	" " No. 504 "	3.85	4.25	4.65
300 & 301	Threadless Outlet	.....	.....	.....
310 & 311	" " "	.....	.....	.....









## One of the World's Famous Newspapers *uses* Appleton No-Thread Unilets



Type "NTT"  
No-Thread Unilet



Type "NTC"  
No-Thread Unilet



Type "NTLL"  
No-Thread Unilet



No-Thread Coupling

**I**N the great press rooms of the Chicago Daily News—long wear and dependability are essential requirements of all the equipment.

Illustrated above is an installation of Super-Production Press Units and Folders manufactured by R. Hoe & Company, New York, and installed in the plant of the Chicago Daily News.

In the wiring of the motors on these Press Units, Appleton No-Thread Malleable Unilets were used throughout. Appleton No-Thread Unilets are made of malleable iron (greater strength with lighter weight), there is maximum wiring space inside, the cadmium coating insures a rust-resisting surface, and they will last practically a lifetime. Write for further information.

### SOLD THROUGH JOBBERS

*Appleton No-Thread Unilets are listed as Standard by Underwriters Laboratories in 1/2-inch to 4-inch sizes, inclusive*

**APPLETON ELECTRIC COMPANY**

1704 Wellington Ave., Chicago, U. S. A.

New York—150 Varick St. San Francisco—655 Minna St. Los Angeles—340 Azusa St.  
*Manufacturers of Appleton Constant Duty and Portable Type Reelites*

# APPLETON

## No-Thread Malleable

THE ORIGINAL THREADLESS CONDUIT FITTINGS

# UNILETS

Reg. U. S. Pat. Off.



●John H. Trumbull, President, The Trumbull Electric Mfg. Co. in full flight in his own plane. Inset: John H. Trumbull, Ex-Governor of Connecticut, has long been a flying enthusiast. Here he is shown piloting one of the planes of the 118th Observation Squadron, Connecticut National Guard. Mr. Trumbull holds Department of Commerce Private Pilot's License number 1315.



FRONT OPERATED  
"R. B." SWITCHES

Front operated "R. B." Switches are now available. These switches earn their place in modernization programs, by providing the industry with a better and safer means of control for electrical circuits. Write for Bulletin 90.

## Modernization Stirs all industry!

●Although the modern-minded executive may not actually take to the air in a plane he easily sees the value of any proven medium that affords something better.

The tempo of the times calls for speed . . . economy . . . up to the minute performance in every respect.

Old equipment falters and fails under the strain of today's competition. Manufacturers must modernize to keep ahead in the race.

Many plants have already prepared to get the business that is bound to come by revamping factories . . . installing new machinery . . . modernizing methods of control.

The saving one company made in one year in installing a modern switchboard almost paid for the new equipment.

Trumbull can help keep any plant "in the running."

You can buy products covering a complete system of industrial electrical distribution and control from this one source. And you can feel assured that you are getting the latest in design—the most efficient in operation.

### The Trumbull Electric Mfg. Co. Plainville, Conn.

#### BRANCH OFFICES:

Branch Office—NEW YORK: 803 Lincoln Bldg.  
PHILADELPHIA: 511-519 N. Broad St.  
DETROIT BRANCH: 415 Brainerd St.  
SAN FRANCISCO: 432 Fourth St.  
ATLANTA  
Drendell-Trumbull Electric Mfg. Co.  
SAN FRANCISCO, CAL.

Branch Panelboard & Switchboard Factories:  
LUDLOW, KENTUCKY  
SAN FRANCISCO

Pacific Coast Division, Branch Switch,  
Switchboard and Panelboard Factories:  
LOS ANGELES SEATTLE

A GENERAL ELECTRIC



ORGANIZATION

## MODERNIZE FOR COST REDUCTION

## OVALDUCT FITTINGS

No.	Description	Price Each
24-CQ	Extension box cover for 4" outlet boxes	\$1.45
401	Box Connector with 1/2" Bondnaul	.12
2133	Squeeze Type Coupling 1 1/4" long	.12
2134	90 Degree Internal Elbow	.12
2135	45 Flat	.26
2136	One piece 90 degree elbow	.50
2156	90 Box Connector	.30
2159	Wire Toggle Fastener	.03
2161	Strap Fastener	.03
2181	Connector Ovalduct to Oval Knockout	.10
2662	Outlet Box 4 x 1/2	.20
2663	Extension Ring for Boxes	.20
2665	Outlet Box 4 x 1/2 with Fixture Stud	.28
2862	3/4 x 1/2	.20
2865	3/4 x 1/2 with Fixture Stud	.26
4170-S1	Sectional Switch Box 4 x 1 1/2 x 1	.35
4172-S1	Spacer for above box	.30

## MOLDING, WIREMOLD

## MOLDING

No. 500 2-Wire, price per ft.	\$ .10
" 700 4-Wire, " " "	.12
" 1000 Master Size, " " "	.23

## FITTINGS FOR No. 500

Number	Description	Price
502	Bushing	\$0.04
504	Supporting Strap	.03
506	Connecting Cover	.03
511-12	45 & 90 Deg. Elbows	.23
515	Tee Plain	.26
516	Cross Plain	.36
517	Internal Elbow	.20
518	External	.20
519	Corner Box	.45
521	1 Piece Rosette	.33
523	1/2" Fixture Rosette	.75
524	1/2" Tee	.60
525	Receptacle Base	.75
526	Keyless Receptacle	.85
527	Attachment Plug	.90
532-23	2 1/2 x 3" Outlet Box	.45
588	Openwork Coupling	.30
599	Moulding Connector	.05

## FITTINGS FOR No. 700

Number	Description	Price
701	Coupling	\$0.03
702	Bushing	.04
703	Clip	.04
704	1 & 2 Hole Strap	.04
706	Connection Cover	.03
707	Multiple Strap	.05
708	Fixture Hook	.20
709	Ground Clamp	.11
711-12	Elbows 45 & 90 Deg.	.20
715	Tee	.30
717	Internal Elbow	.24
717A	Elbow Pull Box	.50
718	External Elbow	.22
719	Corner Box	.50
720	Narrow Fitting	.50
720A	Show Case Outlet	.55
721	1 Piece Rosette	.33
724	Comb.	.65
725	Receptacle Base	.75
726	Keyless Receptacle	.85
727	Plug Receptacle	.95
728	Utility Box	.45
729	Cond. Typs.	.45
730	Contact Block	.20
731	Blank Cover	.12
732-3	2 1/2 x 3" Outlet Box	.40
734	Closed Extension	.65
735	Distribution Box	.70
736	Blank Cover	.15
737	4 1/2" Extension Box	.60
738	4 1/2" Fixture Box	.55
738D	Diple Thru Hook Conn.	1.45
738E	Stamped Hook	.60
739	Canopy	.90
739A	6 1/2" Fixture Box	.90
739A	6 1/2" Extension	.95

## LEWIS METER AND SWITCH CABINETS

CLASS A	Amp.	Volts	Wire	Fuse	Neutral	Numbers	Price
30	125-250	3	2	Solid		M7311-ML7311	\$14.30
30	125-250	3	2	"		M7311M-ML7311M	15.80
30	125	2	1	"		M7211-ML7211	13.90
30	125	2	1	"		M7211M-ML7211M	13.80
30	125	2	2	Fused		M7211D-ML7211D	13.90
60	125-250	3	2	Solid		M7312-ML7312	19.75
60	125-250	3	2	"		M7312M-ML7312M	19.05
60	125	2	1	"		M7212-ML7212	19.30
60	125	2	1	"		M7212M-ML7212M	19.05
60	125	2	2	Fused		M7212D-ML7212D	19.30
CLASS B	30	125	2	1	Solid	M5211 or ML5211	\$12.30
30	125-250	3	2	"		M5311 or ML5311	12.80
30	125	2	2	Fused		M 211 or ML 211	12.20
30	125-250	3	2	Unfused		M 311 or ML 311	12.30
30	250	2	2	Fused		M 221 or ML 221	12.95
60	250	2	2	"		M 222 or ML 222	15.30
30	125-250	3	2	Unfused		M 321 or ML 321	12.70
30	125-250	3	2	Solid		M 321SN or ML 321SN	12.70
60	125-250	3	2	"		M 322 or ML 322	15.30

## "METER TEST TYPE" CABINETS

30 Amps.	Cat. No. M303 or ML303	\$6.25
60 Amps.	Cat. No. M602 or ML602	7.30

These prices apply only to the United States

## N-SUNDRIES

## PIPE NIPPLES

Size Conduit	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
Length Conduit	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
2" to 3 1/2" Long	\$0.10							
2 1/2" x 4 1/2"						\$0.21	\$0.21	
3" x 4 1/2"								\$0.35
3 1/2" x 5 1/2"								\$0.70
Length Conduit	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
4" Long	\$0.10							
5" Long	.14	\$0.14	\$0.20	\$0.24	\$0.30	\$0.38		
6" Long	.15	.17	.22	.28	.34	.40	\$0.80	\$1.00
7" Long	.18	.21	.27	.34	.40	.55	1.05	1.25
8" Long	.21	.23	.30	.37	.45	.60	1.12	1.40
10" Long	.22	.25	.33	.40	.50	.67	1.22	1.55
11" Long	.27	.37	.40	.56	.75	1.35	1.65	
12" Long	.30	.35	.45	.58	.70	.95	1.45	1.80
12" Long	.30	.38	.48	.61	.75	1.00	1.55	1.95

## CHASE NIPPLES &amp; COUPLINGS

Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
Chase Nipples, each	\$ .10	\$ .10	\$ .10	\$ .14	\$ .25	\$ .28	\$ .32	\$ .70
Couplings	.12	.12	.12	.14				

For Erickson Couplings, see Page PL-8.

## CHASE MALE REDUCERS AND FEMALE ENLARGERS

Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
1/2" to 1/4" Reducer, each	\$ .20							
1/4" to 1/2" Reducer, each	.25							
1/2" to 3/4" Reducer, each	.45							
1/4" to 1/2" Enlarger, each	.20							
1/2" to 3/4" Enlarger, each	.25							
3/4" to 1" Enlarger, each	.35							
1" to 1 1/4" Enlarger, each	.50							

## NAILS—Insulated

Millonite Insulated Nails, per dozen	\$ .05	Per Box	\$ .40
Leather Nail Heads, " "	.05	of	.40
Staples Insulated, " "	.05	100	.40

## PLUGS, ATTACHMENT

## ATTACHMENT PLUGS COMPLETE

Attachment	Price
"Pony" Composition	\$0.15
Standard	.20
"Pony" Genuine "Bakelite"	.15
Polarized Standard Comp. Plug	.25
Large Size Double T Slot Comp.	.60
Porcelain	.50
Weatherproof One Piece Comp.	.45
Benjamin #903 Swivel Plug	.20
Pony Body Only \$0.10	
Standard Body \$0.15	
Large Body \$0.35	

## 10 AMP.—CAPS ONLY—For Attachment Plugs

Attachment	Price
"Pony" Cap Composition	\$0.10
Standard	.10
"Standard" Cap "Bakelite"	.10
Large Size Cap Composition	.25
Plug With Extension Knob	.10
Soft Rubber Cap	.25
"Standard" Cord Grip Cap	.30
Steel Covered Cap	.20
Brass	.45
Steel	.45
Disappearing Door Comp. Cap	1.15
Brass Cov. Cap	1.20
"Standard" Brass Cov. Finger Grip	.70
"Knostrain" Comp. Cap	.40
Brass Cov. Knostrain	.65
Comp. Fusible Cap	.60
Polarized 2 Wire Comp.	.20
" 2 Brass Cov. Cap	.40
" 2 Steel	.25
" 2 Cord Grip	.35

## 20 AMP. CAPS—For Polarized Devices

Attachment	Price
2 Wire Brass Covered Cap	\$0.90
3 " Steel Covered Cord Grip Cap	1.20
3 " Steel Covered Cord Grip Cap	1.00
3 " Steel Covered Cord Grip	1.30

## 30, 40 &amp; 60 AMP. CAPS—For Polarized Devices

Attachment	Price
30 Amp. 2 Wire Porcelain Cap	\$1.55
30 " 2 Steel Cov. Cord Grip	1.90
30 " 3 Porcelain	1.35
30 " 3 Steel Cov.	1.75
40 " 3 Str. Cap Ground, C. G.	2.25
60 " 3 Steel Cov. Cord Grip	2.10

## Flasher Plugs

Diamond Flasher Button	\$0.60	No. 125 Speedoodle Plugs	\$2.50
"Propp" #530 Flasher Button	.50	No. 164	.60
"Rodale" 110 Volt Plug	.50	No. 161	.40
220 Volt Plug	.65	No. 165	.90

## PLUGS, APPLIANCE

Make	No.	Description	Price
American Beauty	802	Plug Complete for Small Irons	\$0.40
	806	" " Large	1.25
	807	" " Toasters & Stoves	.20
Arrow & Hart	7762	Standard Size with Switch	.40
Beveman	7760	" " without	.20
Heaver	7761	" " Pony	.20
	F-1	"Gripall" Super-Type Adjustable Cont.	.45
	F-5	" " Armored Casing	.55
	F-7	" " Adj. Cont. Bakelite	.50
	F-22	" " Heater Plug—Full Size	.20



### PLUGS, APPLIANCE, Continued

PLUGS, AFFILIANCE, Continued			
Beaver	F-31	Standard Heater Plug—Single Sided Cont.	\$0.15
"Gripall" & "Suizall"	F-32	Heater Plug Double Sided Cont.	.20
	F-33	Armored Casing (F-32 Type Armored)	.25
	F-34	Medium Heater Plug—Bakelite.	.25
	F-36	Small Heater Plug—Black.	.20
	G-1	"Gripall" Heater Switch Plug Adj. Cont.	.80
	G-2	"Gripall" Heater Switch Plug Nickel Alloy	
		Contacts	.90
	G-21	Competitive Push Button Type	.40
	G-22	New Toggle Type	.40
Belden	1708	Aircool Heater Plug	1.00
Bryant	669	Universal Appliance Plug with Switch	.90
	668	Switchless	.50
	752	Appliance Plug with Indicating Switch	.60
	2966	Small Switchless Plug	.45
Cutler-Hammer	7051	Appliance Plug with Switch	.60
G. E.	2602	Armored Heater Plug No Switch	.25
	2633	Large Heater Plug	.20
	2642	Switch " " with " "	.45
	2699	Small " " No " "	.25
	2826	"Handy Pull" Heater Plug	.30
Hemco	H250	Switchless Appliance Plug Bakelite	.50
	H260	Switch	.90
Hotpoint	CD6F1	Iron Plug No Switch	.45
	CD69P1	" " " " Armored	.45
	CD79P1	" " " " with " "	1.00
Kool-Pull (Noark)	8037	Appliance Plug—No Switch	.75
	8039	" " " " with " "	1.00
Propp	5	One 4-All Appliance Plug—No Switch	.30
	52	Iron Plug with Switch	.50
	55	Standard Iron Plug—No Switch	.20
	56	Armored " "	.30
Reynolite	500	Heater Plug	.40
	510	Switch Heater Plug	.75
Rodale	P-21	Heater Plug No Switch Cold Molded	.15
	P-29	" " " " Armored	.20
	415	Ftall Heater Plug—No Switch	.45
	610	Bakelit " " Sm " "	.20
	850	Armored Heater Plug—No Switch	.80
	800	Iron Plug with Switch " " Armored	.65
Simplex	800	Armored Plug—No Switch	.75
	990	Deluxe Chromplate Plug	1.00
Sunbeam	A-85	Heater Plug	1.50
Torrid	B-0808	Automatic Heat Control Plug	1.00
	B-080	Safety " "	1.00
Waage		3 & 4 Heat Plug Only	.50
Westinghouse	299423	Appliance Plug—No Switch	.75
	373656	" " " " —With " "	1.00

## PANEL BOARDS OR FUSE CABINETS

**FRANK ADAM**

		4	6	8	12
All 30 Amp.—S. P.—NEC Fuses		Branch	Branch	Branch	Branch
"FBX" Safety Type	Fuse Boxes.....	\$ 3.80	\$ 5.60		
"NR"	Main Cable Lug Only			\$ 8.90	\$11.90
"	Solid Neutral.....	11.15	13.40	15.60	
NR3G	Main Cable Lug Only			16.50	18.80

**BENJAMIN-STARRETT**

Cat.	Type and Description	4	6	8	10	12
No.		Circt.	Circt.	Circt.	Circt.	Circt.
66104-12 NP	One Fuse 3 Wire Serv.....	\$ 5.20	\$ 7.40	\$ 8.90	\$10.40	\$11.90
66204-12 P	Two Fuse 2 Wire Serv.....	7.50	11.15	13.35	15.60	18.60
66304-12 NEP	One Fuse with Switch Pl.....	7.10	10.30	12.80	16.50	19.60
66404-12 EP	Two Fuse with Switch Pl.....	10.30	15.25	19.15	21.80	25.15

**BULLDOG FUSENTERS**

BUILDING FIXTURES									
No.	Description	6	8	10	12				
CBS	Surface	Black Finish with shield	Circ.	Circ.	Circ.	Circ.			
BOS	"	Black Finish without Shield	\$1.80	\$2.30	\$3.90	\$7.00	\$9.75	\$10.30	
BF	Flush	Laminized Finish	1.65	2.15	.....	.....	.....	.....	
BBF	"	Laminized Finish	2.50	3.70	5.35	8.75	10.30	11.75	
BSF	"	Lum. Finish with Toggle Switches	2.00	2.75	4.70	.....	.....	.....	
BSSF	"	Lum. Finish with one 30 A. Safetofuse	.....	6.60	9.90	13.20	15.70	19.80	
BSSF	"	Lum. Finish with one 60 A. Safetofuse	.....	20.50	22.00	31.75	33.35	35.00	
BKF	"	Lum. Finish with Pull Box	.....	21.50	22.30	32.25	33.75	35.40	
			.....	6.60	9.90	14.85	17.35	19.80	

**FUSE CABS—All-Steel-Equip. Co.**

Style and No.	Description	2		6		8		12	
		Circ.	Rect.	Circ.	Rect.	Circ.	Rect.	Circ.	Rect.
C702-4-6	Flush, Small Type Black.....	\$1.50	\$2.25	\$3.55					
C902-4-6	Flush.....	1.50	2.25	3.55					
D3008 & 12	Flush, Sgl or Two Fuse.....					\$5.75	\$7.75		
D3038 & 12	Flush.....					5.95	8.75		
D5304-6-8-12	Flush.....		4.95	7.00	9.10	14.45			
D5304-6-8-12	Flush.....		4.95	7.00	9.10	14.45			

## KILLARK

	2	4	6	8	10	12
Standard Flush Type Panels	Circ.	Circ.	Circ.	Circ.	Circ.	Circ.
Series KRP—2 to 12 Inclusive..	\$2.00	\$2.90	\$4.75	\$6.50	\$8.50	\$10.75

**CUTLER-HAMMER—Fuse Panels—Flush Mounting  
All 30 Amp.**

<b>Circuits</b>	<b>2 Cir.</b>	<b>4 Cir.</b>	<b>6 Cir.</b>
<b>Black Finish Series 4355 H1 to 6.....</b>	<b>\$ 1.90</b>	<b>\$ 2.60</b>	<b>\$ 4.65</b>
<b>Aluminum Finish Series 4355 H1 to 6.....</b>	<b>2.40</b>	<b>3.45</b>	<b>5.35</b>
<b>Circuits</b>	<b>8 Cir.</b>	<b>10 Cir.</b>	<b>12 Cir.</b>
<b>Black Finish Series 4355 H1 to 6.....</b>	<b>\$ 8.20</b>	<b>\$ 9.95</b>	<b>\$10.20</b>
<b>Aluminum Finish Series 4355 H1 to 6.....</b>	<b>8.65</b>	<b>10.95</b>	<b>11.65</b>

**G. E. or TRUMBULL—Residence Panel Boards**

G. E. or KUMBULL—Residence Panel Boards					
	10	12	15	20	25
	Circ.	Circ.	Circ.	Circ.	Circ.
Surface or Flush Mounting					
Single No 3104 to 3212					
Flush Mtg. or Fusing					
2500 to 2912					
Surface Mtg.	\$2.80	\$ 4.55	\$ 9.65	\$11.25	\$13.00
Double No. 3404 to 3412					
Flush Mtg. or Fusing					
2704 to 3712					
Surface Mtg.	9.10	12.40	18.15	23.10	26.40

### SQUARE D—Fuse Cabinets

	2	4	6	8	10	12
	Circuit	Circuit	Circuit	Circuit	Circuit	Circuit
Series 37000 to 39000						
Flush Series 37000 Black	\$1.85	\$2.50	\$4.50	\$7.90	\$ 9.50	\$11.15
"    37000 Aluminum	2.35	3.35	5.10	8.30	10.00	11.15
Surface Series 39000 Black	1.85	2.50	4.50	7.90	9.50	11.15
NOTE: 2 & 4 Circuit Flush Type arranged for mounting direct to front side of						
studding with channels for lathe ends, each.....\$0.20						

### Combination Fuse Cabinets

60 Amp. Fuse Break and 30 Amp. Circuits		60 Amp.	2	4	6	8
		Only	Circuit.	Circuit.	Circuit.	Circuit.
Flush Mounting	Aluminum.....	\$7.45	\$12.40	\$14.00	\$14.85	\$23.00
Surface	Black.....	6.45	10.75	11.55	12.40	20.65

## WADSWORTH Fuse Cabinets & Panelboards

	2	4	6	8	10	12
All Dead Front Single Fusing	Circ.	Circ.	Circ.	Circ.	Circ.	Circ.
Surface Mtg.	\$2.30	\$3.00	\$4.85	\$5.75	\$7.55	\$11.55
Flush Mtg. Hanger Support	2.85	3.80	6.10	7.55	10.20	12.00
Flush Type for Tgle Sw.	6.85	11.10	13.75	16.40	19.85	
		16 Circ.	20 Circ.	24 Circ.		
Surface Mtg. Enc. Panel Boards 100 Amp.		\$22.00	\$25.35	\$32.00		
Flush		24.75	28.00	34.65		

### WESTINGHOUSE Junior Residence Type

	2	3	4	6	8	10	12
Junior Residence Panels	Circ.	Circ.	Circ.	Circ.	Circ.	Circ.	Circ.
No. K-64012-21 & 64032-61	\$2.50	\$2.70	\$3.75	\$5.35	\$5.75	\$10.30	\$11.70
Junior Building Panels for Toggle Switches							
No. K-64034-42 & 64074-51			6.80	9.00	13.20	15.70	19.80
Pothead Compound Per Pound							.50

## PLATES & PLUGS, RECEPTACLE

### PLATES—For Flush Receptacles

	.040 Gauge		.060 Gauge	
	Bakelite	Lacquer B. Brass	Lacquer B. Brass	Lacquer B. Brass
Single or Duplex Plate.....	\$0.15	\$0.10	\$0.15	\$0.20
Lift Cover Plate 1 Outlet.....		.40	.55	.65
Radio Plates Jack Type—Sgle. or Duplex.....	.20	.15	.20	.30
Telephone.....	.20		.35	.45
"    "    Double.....	.20		.45	.50
Disappearing Door Plate Sgle. or Duplex.....				.75
Chapman Receptacle.....				1.15
Blank Plates One Gang.....				.75
Blank Plates Two Gang.....	.80	.25	.30	.30
Bull's Eye Plate One Gang.....	.80	.70	.80	.85
"    "    and 1 Switch Comb.....	.90			1.00
"    "    and 1 Recept.....	.50	.55	.70	.80
Switch and Sgle. or Duplex Recept.....				.80
Steel Plates for 30 and 40 amp. Polarized Receptacles.....				.80
Solid Brass Plates 30, 40 & 60 Amp.....				1.65
Screwless Plates Bakelite for Hubbell Receptacles.....				.35
Porcelain Enameled Plates for Sgle. or Duplex Receptacles.....				.25
Minor Glass Plate Receptacle.....				1.15
DeLuxe Metal Plates for Single or Duplex Receptacles.....				.90
DeLuxe Wood Inlaid Plates for Single or Duplex Receptacles.....				2.35

## CAPS & PLUGS For Receptacles

10	Amp. Pony Bakelite Cap.	\$0.10
10	Standard	.10
10	Cap With Extension Knob	.10
10	Brass Covered Cap.	.40
10	Steel	.10
10	Cord Grip Cap	.25
10	Tandem Blade Comp.	.25
10	Radio Jack Plug	.40
10	Radio Plug For #2144 Receptacle	.25
10	Chapman Plug Compos.	.75
10	Chapman Plug Porcelain	.40
10	Disappearing Door Plug Brass Top	1.20
10	Amp. 2 Wire Polariz. Comp. Cap.	.30
10	Cord Grip Cap	.30
20	Comp.	.50
20	Cord Grip	.80
30	Comp.	.90
30	Cord Grip	1.60
10	Comp.	.70
10	Cord Grip	.70
20	Comp.	.70
20	Cord Grip	1.10
20	Porc	.60
30	Comp. Cord Grip	1.70
40	Heavy Duty Angle Cap.	2.40
60	2 Wire Cord Grip	.80
110	Volts 2 CP S8 Carbon Lamp for Bull's Eye Receptacle	.80
110	Volts 2 CP S7	.60

## RECEPTACLES, FLUSH

STANDARD RECEPTACLES OR CONVENIENCE OUTLETS			
Without Plates		Plates Extra	Price
Shallow Bakelite Side	Wired	Single	\$.20
		Duplex	.30
		"	.30
	Porc.	Single	.30
		Duplex	.40
Deep Bakelite Top	"	Single	.40
		Duplex	.60
	Porc.	Single	.35
		Duplex	.55
Shallow Bakelite Side	"	Single	.15
	"	Duplex	.20

*These prices apply only to the United States*

**YAXLEY RADIO RECEPTACLES**  
Or Convenience Outlets  
Description

### RECEPTACLE COMBINATIONS—With Plates

## RECEPTACLES, PORCELAIN

**Symbol:** Column No. 1—Number of Alabaz Fixture.  
Column No. 2—Resale Price Standard White Glaze Finish.  
Column No. 3—Resale Price All Over Color B-D-E-F-G-H-J-K-L-M.  
Column No. 4—Resale Price Stripe Decoration No. 1A-2A-4A.  
Column No. 5 and 6—Resale Price Stripe Decoration T and U.

The above Prices do not include Glassware or Lamps

## STANDARD RECEPTACLES or Lampholders

*These prices apply only to the United States*

Copper-weld			Galvanized Not Wired			Galvanized Wired			Copper-weld			Galvanized Not Wired			Galvanized Wired		
Size	Price		Price			Size	Price		Size	Price		Size	Price		Size	Price	
1/4"x5 Ft.	\$.65		\$.30	....		1/4"x5 Ft.	\$2.15		1/4"x5	\$2.80		1/4"x5	\$1.85		1/4"x5	\$1.00	
1/2"x6 "	.55		.35	....		1/2"x6 "	2.80		1/2"x6 "	3.40	....	1/2"x6 "	....	....	1/2"x6 "	....	....
3/4"x6 "	1.20		.50	\$.65		3/4"x6 "	3.40	....	3/4"x6 "	4.00	....	3/4"x6 "	....	....	3/4"x6 "	....	....
1"x6 "	1.40		.65	.70		1"x6 "	4.00	....	1"x6 "	4.60	....	1"x6 "	....	....	1"x6 "	....	....
1 1/2"x8 "	1.60		....	....		1 1/2"x8 "	4.60	....	1 1/2"x8 "	5.20	....	1 1/2"x8 "	....	....	1 1/2"x8 "	....	....
1 1/2"x10 "	2.20		....	....		1 1/2"x10 "	5.20	....	1 1/2"x10 "	5.80	....	1 1/2"x10 "	....	....	1 1/2"x10 "	....	....
2"x5 "	1.80		....	....		2"x5 "	5.80	....	2"x5 "	6.40	....	2"x5 "	....	....	2"x5 "	....	....

### CAPS For Above Sockets

	Pend.	$\frac{3}{4}$ Brass	$\frac{1}{2}$ Brass	$\frac{3}{4}$ Brass	$\frac{1}{2}$ Brass	$\frac{3}{4}$ Angle	$\frac{1}{2}$ Angle	Pend. Cord
Standard Brass Cap	\$1.10	\$1.10	\$1.15	\$1.30	\$1.45	\$1.55	\$1.50	\$1.30
Electrolier	.10	.10	.20	.40	....	.55	.65	....
Brass Threaded "	.15	.15	.30	.35	....	....	....	.35
Cold Molded "	.15	.30	.40	....	.70	....	1.25	.40
All Porcelain	.15	.30	.40	.60	.55	....	1.00	.40

### BODIES FOR STANDARD SOCKETS

	Key	Keyless	Pull	Thru
Standard Brass Shell Body Only.....	\$ .20	\$ .15	\$ .25	\$ .20
Standard Electroliner Shell Body Only.....	.20	.15	.30	.20
Brass Shell Threaded Catch Body.....	.35	.30	.50	.35
Cold Molded Composition Body.....	.40	.35	.....	.....
All Porcelain Body Only.....	.40	.35	.85	.40
Lock Type Brass Shell Body Only.....	.65	.60	.75	.65

NOTE: For Expansion Shields—See Page PL-10.

### **BASES Only For Brass and Porcelain Sockets**

Cleat Base For Opp. Wiring.....	\$ .40
Concd. Base for Concd. Wiring—Small.....	.35
Glass Cov. Base Concd. Wiring—Small.....	.30
Brass Covered Base for 3 <sup>rd</sup> Box.....	1.00
Brass Covered Base for 4 <sup>th</sup> Box.....	1.10
Angle Concealed Base.....	.40
All Porcelain Cleat Base.....	.25
All Porcelain Concealed Base.....	.30
All Porcelain For 3 <sup>rd</sup> Box.....	.40
All Porcelain For 4 <sup>th</sup> Box.....	.55

### BRASS BAYONET SOCKETS or Wall Sockets

<b>Keyless Brass Shell</b>	<b>with Small Conc. or Slotted Base.....</b>	<b>80717 &amp; 18</b>	<b>\$ .45</b>
"	"	"	"
"	"	Covered Base.....	60019
"	"	"	.75
"	"	" Large.....	60020
"	"	"	1.00
<b>Key</b>	"	Small Concealed Base.....	9184
"	"	"	.70
"	"	Covered.....	60018
"	"	"	.80
"	"	with Removable Ring.....	50746 & 7
"	"	"	.70

### BRASS TWIN SOCKETS & ADAPTOR SOCKETS or Current Taps

Pull Adaptor Socket—No Outlet.....	\$1.15
Pull Adaptor Socket T Side Tap.....	1.40
Pull Twin Socket-Screw Side Outlet.....	2.00
Pull Socket $\frac{1}{4}$ " Cap T Side Tap.....	1.10
Keyless $\frac{1}{4}$ " Cap Side T Side Tap.....	.75
Key $\frac{1}{4}$ " Cap Side T Side Tap.....	.75

Composition	Mica or Porcelain with Leads.....	\$0.20
"	Decorative Sockets for Temporary Work.....	.57
Porcelain	" " " "	.45

[illegible]

Keyless Candle Porcelain Male.....	3	4
------------------------------------	---	---

Brass Shell 1/4 Cap.	.....	51
Key Pull	.....	56
Brass Shell Push 1/4 Cap.	.....	51

750-1000	15	6.05	6.90	....
1000-1500	20	6.15	7.00	....
1500-2000	25	6.25	7.10	....
2000-2500	30	6.35	7.20	....
2500-3000	35	6.45	7.30	....
3000-3500	40	6.55	7.40	....
3500-4000	45	6.65	7.50	....
4000-4500	50	6.75	7.60	....
4500-5000	55	6.85	7.70	....
5000-5500	60	6.95	7.80	....
5500-6000	65	7.05	7.90	....
6000-6500	70	7.15	8.00	....
6500-7000	75	7.25	8.10	....
7000-7500	80	7.35	8.20	....
7500-8000	85	7.45	8.30	....
8000-8500	90	7.55	8.40	....
8500-9000	95	7.65	8.50	....
9000-9500	100	7.75	8.60	....
9500-10000	105	7.85	8.70	....
10000-10500	110	7.95	8.80	....
10500-11000	115	8.05	8.90	....
11000-11500	120	8.15	9.00	....
11500-12000	125	8.25	9.10	....
12000-12500	130	8.35	9.20	....
12500-13000	135	8.45	9.30	....
13000-13500	140	8.55	9.40	....
13500-14000	145	8.65	9.50	....
14000-14500	150	8.75	9.60	....
14500-15000	155	8.85	9.70	....
15000-15500	160	8.95	9.80	....
15500-16000	165	9.05	9.90	....
16000-16500	170	9.15	10.00	....
16500-17000	175	9.25	10.10	....
17000-17500	180	9.35	10.20	....
17500-18000	185	9.45	10.30	....
18000-18500	190	9.55	10.40	....
18500-19000	195	9.65	10.50	....
19000-19500	200	9.75	10.60	....
19500-20000	205	9.85	10.70	....
20000-20500	210	9.95	10.80	....
20500-21000	215	10.05	10.90	....
21000-21500	220	10.15	11.00	....
21500-22000	225	10.25	11.10	....
22000-22500	230	10.35	11.20	....
22500-23000	235	10.45	11.30	....
23000-23500	240	10.55	11.40	....
23500-24000	245	10.65	11.50	....
24000-24500	250	10.75	11.60	....
24500-25000	255	10.85	11.70	....
25000-25500	260	10.95	11.80	....
25500-26000	265	11.05	11.90	....
26000-26500	270	11.15	12.00	....
26500-27000	275	11.25	12.10	....
27000-27500	280	11.35	12.20	....
27500-28000	285	11.45	12.30	....
28000-28500	290	11.55	12.40	....
28500-29000	295	11.65	12.50	....
29000-29500	300	11.75	12.60	....
29500-30000	305	11.85	12.70	....
30000-30500	310	11.95	12.80	....
30500-31000	315	12.05	12.90	....
31000-31500	320	12.15	13.00	....
31500-32000	325	12.25	13.10	....
32000-32500	330	12.35	13.20	....
32500-33000	335	12.45	13.30	....
33000-33500	340	12.55	13.40	....
33500-34000	345	12.65	13.50	....
34000-34500	350	12.75	13.60	....

### DIM-A-LITE & LO-LITE SOCKETS

No.....	23	23A	33	34	91
Price.....	\$1.00	\$1.25	\$1.25	\$1.25	\$1.50

### Porcelain Keyless

Porcelain Keyless		Price
One Piece with Threaded Cap.....		\$ .60
One Piece with Angle Cap Threaded.....		.80
Two Piece Body Only.....		.90
Two Piece with $\frac{1}{4}$ Brass Cap.....		.90
Two Piece with $\frac{1}{2}$ Brass Cap.....		.85
Two Piece with Pendant Cord Grip.....		1.00

## Brass and Weatherproof

<b>Brass and Weatherproof</b>	
Key Socket $\frac{1}{4}$ " Cap.....	\$ .65
Keyless Socket $\frac{1}{4}$ " Cap.....	.60
Pull Socket $\frac{1}{4}$ " Cap.....	1.15
Push Socket $\frac{1}{4}$ " Cap.....	\$0.61
Wpf. Socket Wire Leads.....	.31

## SOCKET ACCESSORIES

Adaptors for Sockets—See Pages PL-4 and 18.	
Acorn Hubbard 5019-6982-7004—or Similar—Each.	\$ .1
Acorn Luminous Hubbard 7015 Bryant 750 GE 800—or Similar—Each.	3
Bushings Hard Rubber $\frac{1}{2}$ " Each .01c— $\frac{3}{4}$ " Each.	0
Chain for Pull Sockets—Per Foot.	1
Cord for Devices—Light Type—Per Foot.	0
Cord for Devices—Heavy Type—Per Foot.	0
Extension—Benjamin No. 9.	0
Handles for Sockets—Bryant 1240-1388—or Similar.	2
Splicing Links Non-Insulating for Chain—Each.	0
Splicing Links Insulating for Chain—Each.	1

## SOCKETS, HEAVY DUTY

## MOGUL SOCKETS

Arrow, Bryant, G. E., Hubbell, H. & H., P. & S., Weber

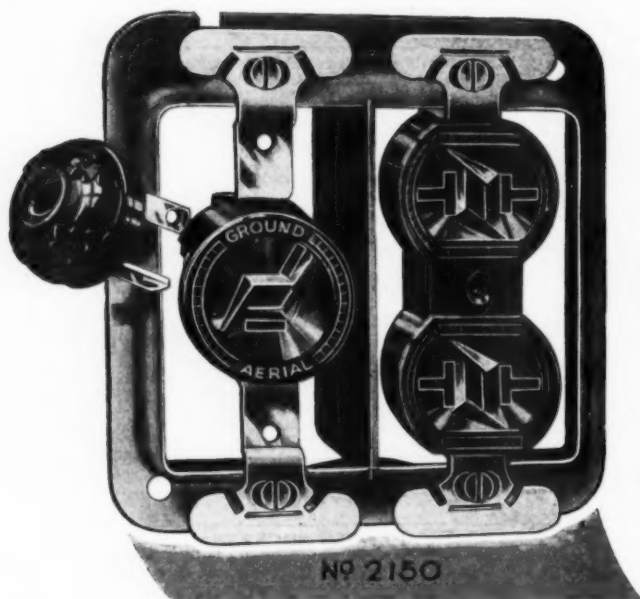
All Keyless		With % or % or % Iron Yoke	With % or % or % Alum. or Brass Cap
Porcelain One Piece Socket Mogul.....	\$ .65	\$1.00	\$1.40
Two " " " "	.85	1.40	1.60
One " " with Lead Wires.....	.85	1.40	1.60
Brass Shell Keyless Mogul Socket % or % Brass Cap.....			\$3.40

*These prices apply only to the United States*



# NEW ARROW Complete Line of

## RADIO OUTLETS



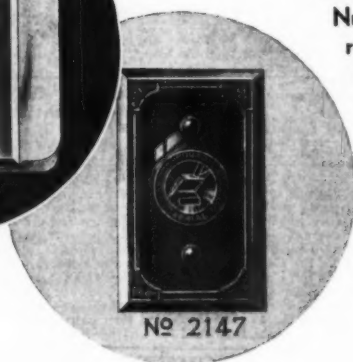
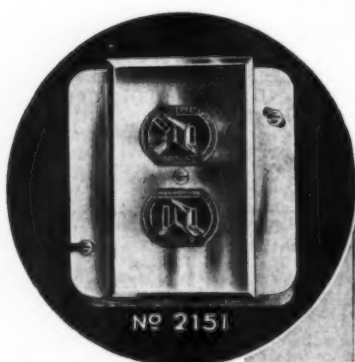
*Providing connections for*

**POWER·GROUND·AERIAL**

*with box cover and barrier*

*to meet the new requirements  
of the National Electric Code*

APPROVED UNDERWRITERS GUIDE CARD NO 361 A4·SEPTEMBER 29, 1931



Underwriters have revised their requirements covering low tension radio circuit and power circuits in the same box.

Numbers 2150 and 2151 are specifically designed to meet these requirements for installation in standard 4" square outlet boxes. . . . .Furnished complete with box cover and barrier for easy installation.

Number 2147 for aerial and ground connections only, fits any standard switch box.

Receptacles take standard plates, brass or BAKELITE. Finding grooves in face of receptacle lead the plug fingers easily into place.

*These Outlets installed with MULTICOUPLER make complete radio receiving systems for apartments, hotels and institutions. Let us send you complete information.*

## ARROW ELECTRIC DIVISION

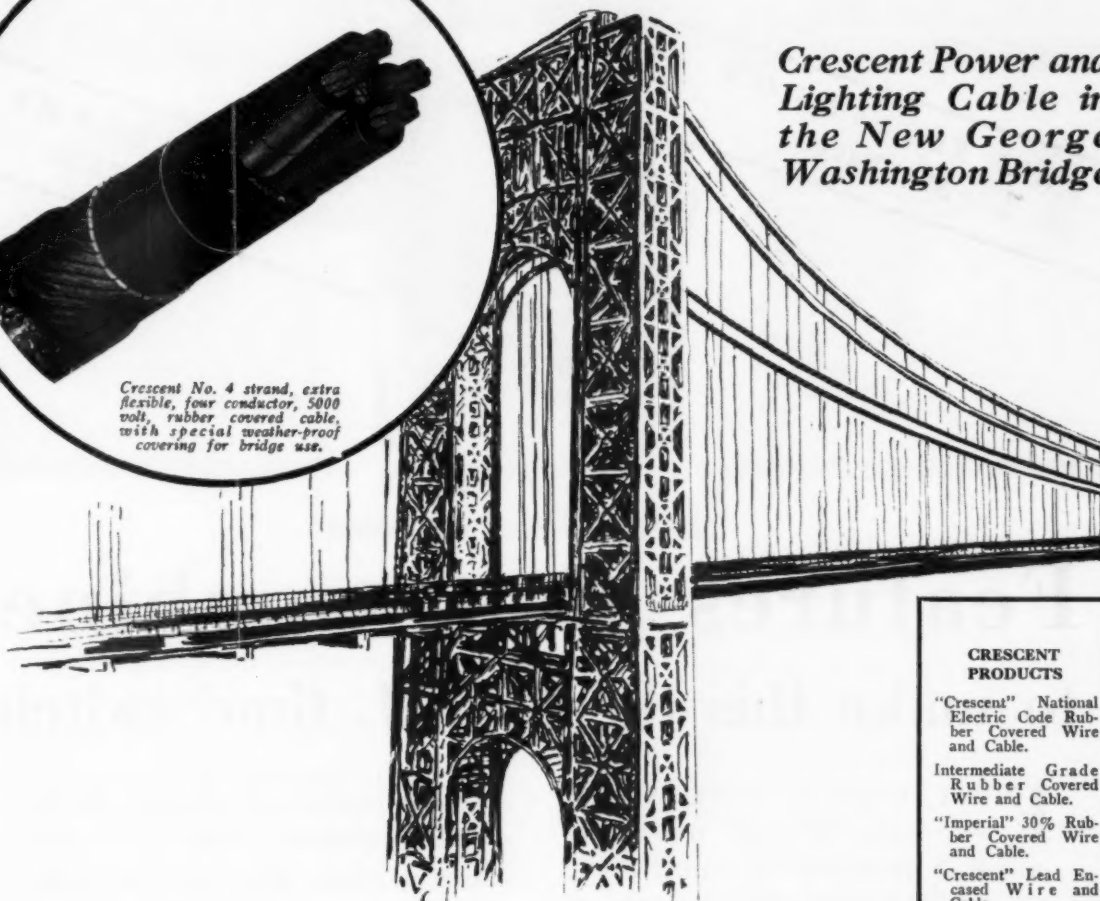
THE ARROW - HART & HEGEMAN ELECTRIC CO.

HARTFORD, CONN.

# CRESCENT'S Important Part in a Magnificent Achievement



*Crescent No. 4 strand, extra flexible, four conductor, 5000 volt, rubber covered cable, with special weather-proof covering for bridge use.*



*Crescent Power and  
Lighting Cable in  
the New George  
Washington Bridge*

The main power cable pictured above is a splendid example of Crescent enterprise and ability. Into it enter the experience and skill of nearly 43 years in the manufacture of every type of insulated wire and cable. In its perfected form it is the last word in weatherproof cable for severe conditions of exposure.

The Port of New York Authority specifications, which governed the construction of all wire and cable, required unusual flexibility, toughness and durability. Not only was it necessary for the cable to be extra flexible to allow for expansion and contraction of the great structure from season to season, but in its exposed position it must endure the extremes of heat, cold and moisture.

The Crescent Insulated Wire & Cable Co. was among the few concerns equipped to manufacture such a cable.

The Lighting Cables for illuminating the roadways, the approaches and associated buildings as well as the cables for the toll booths were manufactured exclusively in the plant of the Crescent Insulated Wire and Cable Co., in Trenton, N. J.

The completeness of the Crescent line assures you of one reliable source of supply for all your wire and cable needs. The cooperation of our Engineering Staff is freely offered on all special wiring problems.

To facilitate deliveries, complete stocks are carried at our plant in Trenton, N. J., and in the various cities where our sales representatives are located.

## CRESCENT PRODUCTS

"Crescent" National Electric Code Rubber Covered Wire and Cable.

Intermediate Grade Rubber Covered Wire and Cable.

"Imperial" 30% Rubber Covered Wire and Cable.

"Crescent" Lead Encased Wire and Cable.

"Crescent" A. B. C. Armored Bushed Cable.

"Crescent" Lead Covered Armored Cable.

"Crescent" Flexible Metallic Conduit.

"Cresflex" Non Metallic Sheathed Cable.

"Crescent" Varnished Cambric Cable, Lead Encased or Braided.

All kinds of special wires and cables.

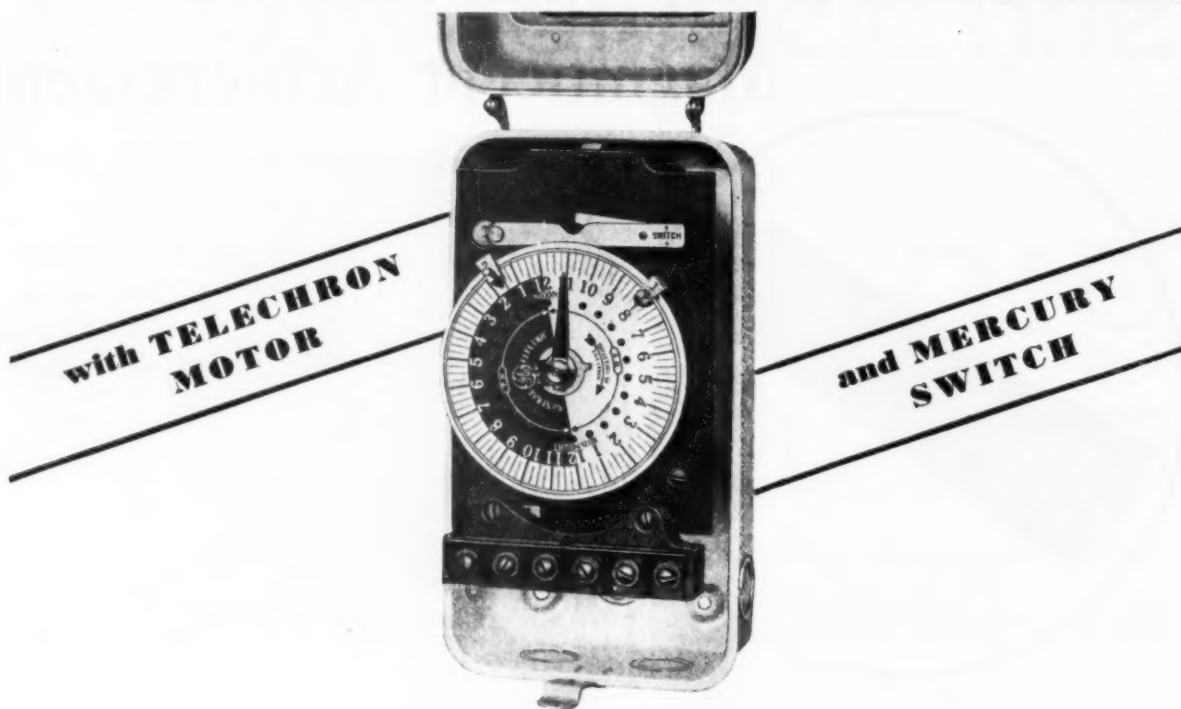
TRADE MARK



Electrical Contractors  
Beach Electric Co., Inc.  
81 Wallace St., Newark, N. J.  
Hoffman & Elias, Inc.  
254 West 31st St., N. Y. C.  
Wimple Electric Co.  
74 East 116th St., N. Y. C.

**CRESCENT**  
*Insulated Wire and Cable Co.*  
**CRESCENT ARMORED WIRE CO.**  
TRENTON N. J.

## THE NEW GENERAL ELECTRIC AUTOMATIC TIME SWITCH



## Features that combine to make this the IDEAL time switch

**F**IRST, there's its Telechron motor—a timing element tested and proved in thousands of electric clocks and other devices. Secondly, there's its mercury switch, the Kon-nec-tor, which assures long life and positive action. These—not to mention many other desirable features—combine to make this the ideal time switch.

Any number of operations a day . . . skip a day or more if desired. Five different switch combinations . . . for

a-c. circuits up to 30 amperes, for indoor and outdoor service . . . with either a plain dial (for fixed-time settings) or an astronomic dial (for sun schedules)—adapt this switch to every application.

Our Bulletin GEA-1427 gives complete information. For a copy, address the nearest office of the General Electric Company or the General Electric Supply Corporation, distributor.

GENERAL  ELECTRIC 621-17

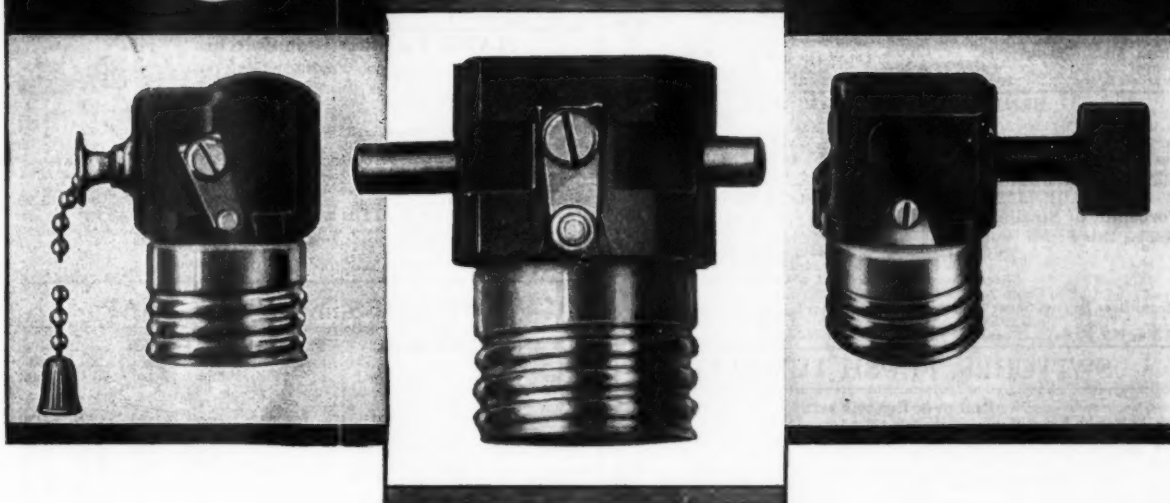
---

SALES AND ENGINEERING SERVICE IN PRINCIPAL CITIES

---



# NOW... THREE NEW SOCKETS WITH *Sealed-In* MECHANISMS



General Electric now offers you three new socket mechanisms; pull, push and key . . . mechanisms *sealed-in*.

The enclosing moulded parts for the mechanisms are made of Textolite. Textolite is extremely strong, light in weight and in every way superior to porcelain which it replaces. Textolite construction seals in the mechanism and thereby protects the operating parts from dirt or injury.

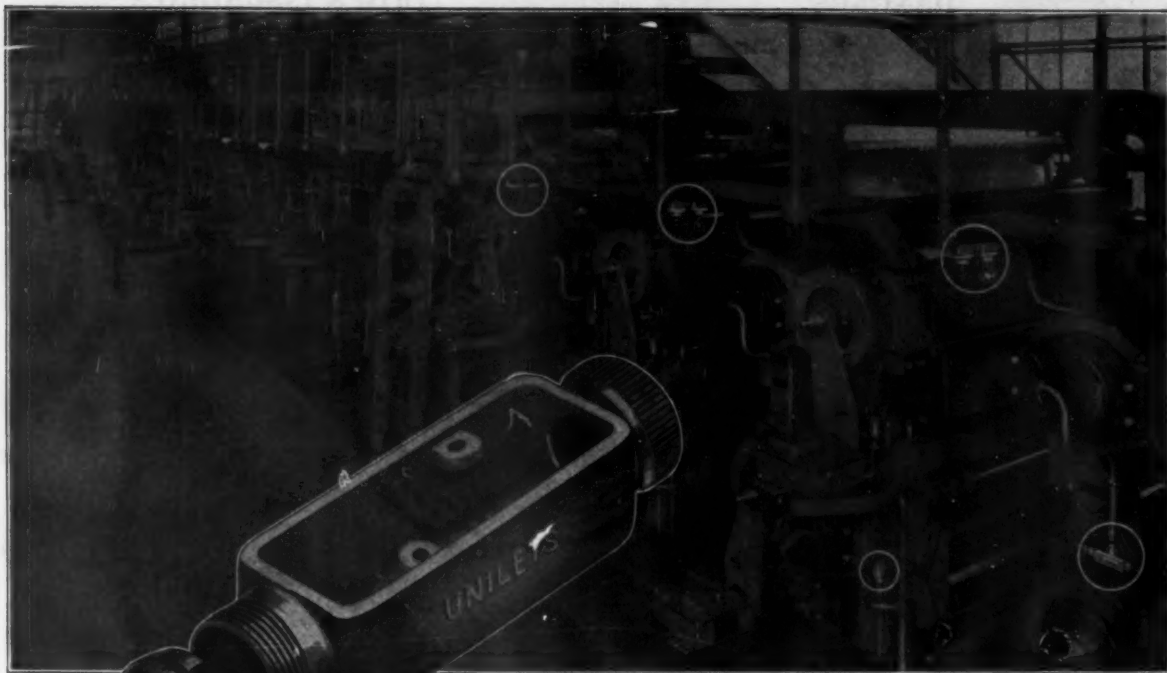
The mechanisms are of an improved type, designed to give quick, smooth action and longer life.

These *sealed-in* mechanisms are now available in three types of shells and many interchangeable combinations. Order a supply of G-E Sockets with *sealed-in* mechanisms from your General Electric Distributor or write Section D-3212, Merchandise Department, General Electric Co., Bridgeport, Conn.

# GENERAL ELECTRIC

## WIRING DEVICES

MERCHANDISE DEPARTMENT, GENERAL ELECTRIC COMPANY, BRIDGEPORT, CONNECTICUT



## One of the World's Famous Newspapers *uses* Appleton No-Thread Unilets



Type "NTT"  
No-Thread Unilet



Type "NTC"  
No-Thread Unilet



Type "NTLL"  
No-Thread Unilet



No-Thread Coupling

**I**n the great press rooms of the Chicago Daily News—long wear and dependability are essential requirements of all the equipment.

Illustrated above is an installation of Super-Production Press Units and Folders manufactured by R. Hoe & Company, New York, and installed in the plant of the Chicago Daily News.

In the wiring of the motors on these Press Units, Appleton No-Thread Malleable Unilets were used throughout. Appleton No-Thread Unilets are made of malleable iron (greater strength with lighter weight), there is maximum wiring space inside, the cadmium coating insures a rust-resisting surface, and they will last practically a lifetime. Write for further information.

### SOLD THROUGH JOBBERS

*Appleton No-Thread Unilets are listed as Standard by Underwriters Laboratories in 1/2-inch to 4-inch sizes, inclusive*

### APPLETON ELECTRIC COMPANY

1704 Wellington Ave., Chicago, U. S. A.

New York—150 Varick St. San Francisco—655 Minna St. Los Angeles—340 Azusa St.

*Manufacturers of Appleton Constant Duty and Portable Type Reelites*

# APPLETON

## No-Thread Malleable

THE ORIGINAL THREADLESS CONDUIT FITTINGS

# UNILETS

Reg. U. S. Pat. Off.



●John H. Trumbull, President, The Trumbull Electric Mfg. Co. in full flight in his own plane. Inset: John H. Trumbull, Ex-Governor of Connecticut, has long been a flying enthusiast. Here he is shown piloting one of the planes of the 118th Observation Squadron, Connecticut National Guard. Mr. Trumbull holds Department of Commerce Private Pilot's License number 1315.



No. 64362

#### FRONT OPERATED "R. B." SWITCHES

Front operated "R. B." Switches are now available. These switches earn their place in modernization programs, by providing the industry with a better and safer means of control for electrical circuits. Write for Bulletin 90.

## Modernization Stirs all industry!

●Although the modern-minded executive may not actually take to the air in a plane he easily sees the value of any proven medium that affords something better.

The tempo of the times calls for speed . . . economy . . . up to the minute performance in every respect.

Old equipment falters and fails under the strain of today's competition. Manufacturers must modernize to keep ahead in the race.

Many plants have already prepared to get the business that is bound to come by revamping factories . . . installing new machinery . . . modernizing methods of control.

The saving one company made in one year in installing a modern switchboard almost paid for the new equipment.

Trumbull can help keep any plant "in the running."

You can buy products covering a complete system of industrial electrical distribution and control from this one source. And you can feel assured that you are getting the latest in design—the most efficient in operation.

## The Trumbull Electric Mfg. Co. Plainville, Conn.

#### BRANCH OFFICES:

Branch Office—NEW YORK, 803 Lincoln Bldg.  
PHILADELPHIA: 511-519 N. Broad St.  
DETROIT BRANCH: 415 Brainerd St.  
Branch Panelboard & Switchboard Factories:  
LUDLOW, KENTUCKY  
SAN FRANCISCO

BOSTON: 1009 Statler Bldg.  
CHICAGO: 3001 W. Pershing Rd.  
SAN FRANCISCO: 432 Fourth St.  
ATLANTA  
Drendell-Trumbull Electric Mfg. Co.  
SAN FRANCISCO, CAL.

Pacific Coast Division, Branch Switch,  
Switchboard and Panelboard Factories:  
LOS ANGELES SEATTLE

A GENERAL ELECTRIC ORGANIZATION



# MODERNIZE FOR COST REDUCTION



**PL-18**  
**Molding**

**Plugs, Appliance**

**OVALDUCT FITTINGS**

No.	Description	Price Each
24-CQ	Extension box cover for 4" outlet boxes.....	\$1.45
401	Box Connector with 1/4" Bondana.....	.25
2133	Squeeze Type Coupling 1 1/4" long.....	.15
2134	90 Degree Internal Elbow.....	.35
2135	45 Flat.....	.25
2136	One piece 90 degree elbow.....	.60
2136	90 Box Connector.....	.30
2139	Wire Toggle Fastener.....	.05
2161	Strap Fastener.....	.02
2181	Connector Ovalduct to Oval Knockout.....	.10
2662	Outlet Box 4 x 1/2.....	.30
2663	Extension Ring for Boxes.....	.20
2665	Outlet Box 4 x 1/2 with Fixture Stud.....	.25
2665	" " 3/4 x 1/2 with Fixture Stud.....	.30
4170-S1	Sectional Switch Box 4 x 1 1/2 x 1.....	.35
4172-S1	Spacer for above box.....	.50

**MOLDING, WIREMOLD**

**MOLDING**

No. 500 2-Wire, price per ft.....	\$ .10
" 700 4-Wire, " " ".....	.12
" 1000 Master Size, " " ".....	.25

**FITTINGS FOR No. 500**

Number	Description	Price
502	Bushing.....	\$0.04
504	Supporting Strap.....	.03
506	Connecting Cover.....	.03
511-12	45 & 90 Deg. Elbows.....	.23
515	Tee Plain.....	.26
516	Cross Plain.....	.36
517	Internal Elbow.....	.20
518	External.....	.20
519	Corner Box.....	.45
521	1 Piece Rosette.....	.33
523	1/4" Fixture Rosette.....	.75
524	3/8" ".....	.60
525	Receptacle Base.....	.75
526	Keyless Receptacle.....	.85
527	Attachment Plug.....	.90
532-23	2 1/2 x 3" Outlet Box.....	.45
585	Operwork Coupling.....	.30
590	Moulding Connector.....	.05

**FITTINGS FOR No. 700**

Number	Description	Price
701	Coupling.....	\$0.03
702	Bushing.....	.04
703	Clip.....	.04
704	1 & 2 Hole Strap.....	.04
706	Connection Cover.....	.03
707	Multiple Strap.....	.05
708	Fixture Hook.....	.20
709	Ground Clamp.....	.11
711-12	Elbows 45 & 90 Deg.....	.20
715	Tee.....	.30
717	Internal Elbow.....	.24
717A	Elbow Pull Box.....	.30
718	External Elbow.....	.22
719	Corner Box.....	.50
720	Narrow Fitting.....	.50
720A	Show Case Outlet.....	.55
721	1 Piece Rosette.....	.33
724	Comb.....	.65
725	Receptacle Base.....	.75
726	Keyless Receptacle.....	.85
727	Plug Receptacle.....	.95
728	Utility Box.....	.45
729	Cond. Type.....	.45
730	Contact Block.....	.20
731	Blank Cover.....	.12
732-3	2 1/2 x 3" Outlet Box.....	.40
734	Closed Extension.....	.65
735	Distribution Box.....	.70
736	Blank Cover.....	.15
737	4 1/2" Extension Box.....	.60
738	4 1/2" Fixture Box.....	.55
738D	Duple Thru Hook Conn.....	1.45
738E	Canopy.....	.60
739	6 1/2" Fixture Box.....	.90
739A	6 1/2" Extension.....	.95

**FITTINGS FOR No. 700**

Number	Description	Price
741	Switch Box.....	\$0.60
742	Junction Box.....	.70
743	Duplex Receptacle.....	1.15
744	Single Deep Box.....	.85
744-2	2 Gang.....	1.40
745	Combination.....	.60
747	Single Shallow Box.....	.60
747-2	2 Gang.....	1.05
747-3	3 ".....	1.30
748	Single Surface.....	.65
748-2	2 Gang.....	1.05
748-3	3 ".....	1.45
748S	Shallow Rec.....	.70
749	Switch & Recep.....	1.00
750	Push Switch Box.....	1.05
751	Single Adp. Plate.....	.70
752	2 Gang.....	1.15
753	3 ".....	1.50
750	Blank Extension Box.....	.90
750	Chase Nipple.....	.15
751A	1/4 x 1/2 Box Connector.....	.30
752A	1/4 x 1/2 Pipe Coupling.....	.35
753	1/4" Elbow Box Conn.....	.35
754	1/4" Pipe Coupl.....	.35
755	Comb. Connector.....	.30
756	Adj. Offset Conn.....	.25
757	Kick Plate.....	.25
758	Openwork Connector.....	.35

**FITTINGS FOR No. 1000**

Number	Description	Price
1001	Coupling.....	\$0.06
1002	Bushing.....	.04
1003	Clip.....	.06
1004	Two Hole Strap.....	.08
1005	One Hole Strap.....	.08
1008	Hanger Assembly.....	.90
1008A	Hanger Clamp.....	.18
1009	Ground.....	.20
1011	90 Deg. Flat Elbow.....	.40
1013	Adj. Elbow.....	.40
1017	Internal Elbow.....	.40
1018	External.....	.35
1020	Keyless Receptacle.....	.30
1020A	Angle.....	1.40
1020B	Blank or Outlet Box.....	.50
1028	Utility Box.....	.70
1035	Distribution Box.....	1.10
1039	6 1/2" Fixture.....	.90
1045	Switch & Recp Box.....	1.00
1052	Pipe Coupling.....	.35
1055	Comb. Connector.....	.30
1056	Offset Connector.....	.70
1087	Kick Plate.....	.32
1089	Reducing Connector.....	.15
1000F	Flex. Fitting 18".....	1.75

**LEWIS METER AND SWITCH CABINETS**

CLASS A	Amp.	Volts	Wire	Fuse	Neutral	MAIN FUSE ACCESSIBLE	Numbers	Price
30	125-250	3	2	Solid.....		M7311-ML7311.....		\$14.30
30	125-250	3	2	".....		M7311M-ML7311M.....		13.80
30	125	2	1	".....		M7311-ML7311.....		13.90
30	125	2	1	".....		M7311M-ML7311M.....		13.80
30	125	2	2	Fused.....		M7311D-ML7311D.....		13.90
60	125-250	3	2	Solid.....		M7312-ML7312.....		19.75
60	125-250	3	2	".....		M7312M-ML7312M.....		19.05
60	125	2	1	".....		M7312-ML7312.....		19.30
60	125	2	1	".....		M7312M-ML7312M.....		19.05
60	125	2	2	Fused.....		M7312D-ML7312D.....		19.30
CLASS B	30	125	2	1	Solid.....	M5211 or ML5211.....		\$12.30
30	125-250	3	2	Fused.....		M5311 " ML5311.....		12.80
30	125	2	2	Fused.....		M 211 " ML 211.....		12.20
30	125-250	3	2	Unfused.....		M 311 " ML 311.....		12.30
30	250	2	2	Fused.....		M 221 " ML 221.....		12.95
60	250	2	2	Fused.....		M 222 " ML 222.....		15.30
30	125-250	3	2	Unfused.....		M 321 " ML 321.....		12.70
30	125-250	3	2	Solid.....		M 321SN or ML 321SN.....		12.70
60	125-250	3	2	".....		M 322 or ML 322.....		15.30

**"METER TEST TYPE" CABINETS**

30 Amps.....	Cat. No. M303 or ML303.....	\$6.25
60 Amps.....	Cat. No. M602 or ML602.....	7.30

**N-SUNDRIES**

**PIPE NIPPLES**

Size Conduit	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
Cond. Cond. Cond. Cond. Cond. Cond. Cond. Cond.	\$0.07	\$0.08	\$0.12	\$0.16	\$0.20	\$0.24		
Length Conduit								
2" to 3 1/4" Long.....	\$0.10							
3 1/4" to 4 1/4" ".....		\$0.12	\$0.15					
4 1/4" to 5 1/4" ".....			\$0.21	\$0.21				
5 1/4" to 6 1/4" ".....				\$0.35				
6 1/4" to 7 1/4" ".....					\$0.70			
7 1/4" to 8 1/4" ".....						\$0.85		
Length Conduit								
4" Long.....	\$0.10							
5" ".....		\$0.14	\$0.20	\$0.24	\$0.30	\$0.38		
6" ".....		.15	.17	.22	.28	.34	.40	\$0.80 \$1.00
7" ".....		.18	.21	.27	.34	.40	.55	1.05 1.25
8" ".....		.21	.23	.30	.37	.45	.60	1.12 1.40
9" ".....		.22	.25	.33	.40	.50	.67	1.22 1.55
10" ".....		.24	.27	.37	.40	.56	.75	1.35 1.65
11" ".....		.30	.35	.45	.58	.70	.95	1.45 1.80
12" ".....		.30	.38	.48	.61	.75	1.00	1.55 1.95

**CHASE NIPPLES & COUPLINGS**

Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
Chase Nipples.....	\$ .10	\$ .10	\$ .10	\$ .14	\$ .25	\$ .28	\$ .32	\$ .50 \$1.10
Couplings.....	.12	.12	.12	.14				

**CHASE MALE REDUCERS AND FEMALE ENLARGERS**

Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
1/2" to 1/4" Reducer, each.....	.25	.25	.25	.25	.25	.25	.25	.25
1/4" to 1/2" ".....	.45	.45	.45	.45	.45	.45	.45	.45
1/2" to 3/4" ".....								
3/4" to 1" ".....								
1" to 1 1/4" ".....								
1 1/4" to 1 1/2" ".....								
1 1/2" to 2" ".....								
2" to 2 1/2" ".....								
2 1/2" to 3" ".....								

**NAILS—Insulated**

Milfonite Insulated Nails, per dozen.....	\$ .08	Per Box	
Leather Nail Heads, " " ".....	.05	of	
Staples Insulated, " " ".....	.05	100	

**PLUGS, ATTACHMENT**

**ATTACHMENT PLUGS COMPLETE**

	Price
"Pony" Composition.....	\$0.15
Standard.....	.20
"Pony" Genuine "Bakelite".....	.15
Polarized Standard Comp. Plug.....	.25
Large Size Double T Slot Comp.....	.60
" " Porcelain.....	.50
Weatherproof One Piece Comp.....	.45
Benjamin #003 Swivel Plug.....	.20
Pony Body Only.....	\$0.10
Standard Body.....	\$0.15
Large Body.....	\$0.35

**10 AMP.—CAPS ONLY—For Attachment Plugs**

	Price
"Pony" Cap Composition.....	\$0.10
"Standard" Cap "Bakelite".....	.10
Large Size Cap Composition.....	.25
Plug With Extension Knob.....	.10
Soft Rubber Cap.....	.25
"Standard" Cord Grip Cap.....	.30
Steel Covered Cap.....	.20
" " Brass.....	.45
" " Cord Grip.....	.40
Disappearing Door Comp. Cap.....	1.15
" " Brass Cov. Cap.....	1.20
"Standard" Brass Cov. Finger Grip.....	.70
" " "Knostrain" Comp. Cap.....	.40
" " Brass Cov. Knostrain.....	.65
" " Comp. Fusible Cap.....	.60
Polarized 2 Wire Comp.....	.20
" " 2 " Brass Cov. Cap.....	.20
" " 2 " Steel.....	.25
" " 2 " Cord Grip.....	.35

**20 AMP. CAPS—For Polarized Devices**

2 Wire Brass Covered Cap.....	\$0.90
3 " " ".....	1.20
2 " " Steel Covered Cord Grip Cap.....	1.00
3 " " ".....	1.30

**30, 40 & 60 AMP. CAPS—For Polarized Devices**

30 Amp. 2 Wire Porcelain Cap.....	\$1.55
30 " 2 " Steel Cov. Cord Grip.....	1.90
30 " 3 " Porcelain.....	1.55
30 " 3 " Steel Cov.....	1.75
40 " 3 " Str. Cap Ground. C. G.....	2.25
60 " 3 " Steel Cov. Cord Grip.....	2.10

**Flasher Plugs**

Diamond Flasher Button.....	\$0.60	No. 125 Skeddoodle Plugs.....	\$2.50
"Propp" #330 Flasher Button.....	.60	No. 164 ".....	.65
"Rodale" 110 Volt Plug.....	.50	No. 161 ".....	.65
" " 220 Volt ".....	.65	No. 165 ".....	.90

**PLUGS, APPLIANCE**

Make	No.	Description	Price
American Beauty	802	Plug Complete for Small Irons.....	\$0.40
	806	" " " " Large.....	1.25
	807	" " " " Toasters & Stoves.....	.20
Arrow & Hart	7762	Standard Size with Switch.....	.40
Hegehan	7760	" " " " without ".....	.20
Beaver	7781	Pony.....	.20
	F-1	"Gripall" Super-Type Adjustable Cont.....	.45
	F-3	" " " " Armored Casing.....	.65
	F-7	" " " " Adj. Cont. Bakelite.....	.50
	F-22	" " " " Heater Plug—Full Size.....	.20

These prices apply only to the United States

Electrical Contracting, December, 1931

# Plugs, Appliance

## PLUGS, APPLIANCE, Continued

Beaver	F-31	Standard Heater Plug—Single Sided Cont.	\$0.15
"Gripall" & "Suitzall"	F-32	Heater Plug Double Sided Contacts	.20
	F-33	Armored Casing (F-32 Type Armored)	.25
	F-34	Medium Heater Plug—Bakelite	.25
	F-36	Small Heater Plug—Black	.20
	G-1	"Gripall" Heater Switch Plug Adj. Cont.	.80
	G-2	"Gripall" Heater Switch Plug Nickel Alloy	.90
	G-21	Competitive Push Button Type	.45
	G-22	New Toggle Type	.45
Belden	1708	Aircool Heater Plug	1.00
Bryant	665	Universal Appliance Plug with Switch	.90
	669	Switchless	.50
	752	Appliance Plug with Indicating Switch	.60
	2966	Small Switchless Plug	.45
Cutler-Hammer	7051	Appliance Plug with Switch	.60
G. E.	2902	Armored Heater Plug No Switch	.25
	2633	Large Heater Plug	.20
	2642	Switch "with"	.45
	2699	Small "No"	.25
	2826	"Handy Pull" Heater Plug	.30
Hemco	H250	Switchless Appliance Plug Bakelite	.50
	H260	Switch	.90
Hotpoint	CD6P1	Iron Plug No Switch	.45
	CD60P1	"with" Armored	.60
	CD70P1	"with" Armored	1.00
Kool-Pull (Noark)	8037	Appliance Plug—No Switch	.75
	8039	"with"	1.00
Propp	5	One 4-All Appliance Plug—No Switch	.30
	52	Iron Plug with Switch	.50
	55	Standard Iron Plug—No Switch	.20
	56	Armored	.30
Rayalite	500	Heater Plug	.40
	510	Switch Heater Plug	.75
Rodale	P-21	Heater Plug No Switch Cold Molded	.15
	P-29	Armored	.20
	450	F tial Heater Plug—No Switch	.45
	610	Bakelite "Small"	.20
	615	Armored Heater Plug—No Switch	.30
	850	Iron Plug with Switch	.65
	800	Armored	.45
Simplex	980	Armored Plug—No Switch	.75
	990	Deluxe Chromplate Plug	1.00
Sunbeam	A-85	Heater Plug	1.50
Torrid	B-0808	Automatic Heat Control Plug	1.00
	B-080	Safety	1.00
Waage		3 & 4 Heat Plug Only	.60
Westinghouse	299423	Appliance Plug—No Switch	.75
	373856	"With"	1.00

## PANEL BOARDS OR FUSE CABINETS

### FRANK ADAM

All 30 Amp.—S. P.—NEC Fuses	Branch	Branch	Branch	Branch
"FBX" Safety Type Fuse Boxes	\$ 3.50	\$ 5.00	\$ 8.00	\$11.90
"NR" Main Cable Lug Only	11.15	13.40	15.60	18.80
NR3G Solid Neutral				
NR3G Main Cable Lug Only			16.50	19.80

All for Plug Fuses	Circuit	Circuit	Circuit	Circuit	Circuit
Cat. No. Type and Description	4	6	8	10	12
06104-12 NP —One Fuse 3 Wire Serv.	\$ 5.20	\$ 7.40	\$ 8.90	\$10.40	\$11.90
06204-12 P —Two Fuse 2 and 3 Wire Serv.	7.50	11.15	13.35	15.60	18.60
06304-12 NEP —One Fuse with Switch Pl.	7.10	10.30	12.80	16.50	19.15
06404-12 EP —Two Fuse with Switch Pl.	10.30	15.25	19.15	21.80	25.15

### BULLDOG FUSEMETERS

No. Description	2	4	6	8	10	12
CB5 Surface Black Finish with shield	Circuit	Circuit	Circuit	Circuit	Circuit	Circuit
BOS " Black Finish without Shield	\$1.80	\$2.30	\$3.00	\$7.00	\$9.75	\$10.30
BF " Luminized Finish	1.65	2.15	2.50	3.70	5.35	10.30
BBF " Black Finish	2.00	2.75	4.70			
BSF " Lum. Finish with Toggle Switches	6.00	9.00	13.20	15.70	19.80	
BSSF " Lum. Finish with one 30 A. Saftofuse	20.50	22.00	\$1.75	33.35	35.00	
BSSF " Lum. Finish with one 60 A. Saftofuse	21.50	22.30	\$2.25	33.75	35.40	
BKF " Lum. Finish with Pull Box	6.00	9.00	14.85	17.35	19.80	

### FUSE CABS—All-Steel-Equip. Co.

Style and No.	Description	2	4	6	8	10	12
C702-4-6	Surf. Small Type Black	Circuit	Circuit	Circuit	Circuit	Circuit	Circuit
C902-4-6	Flush	\$1.50	\$2.25	\$3.55			
D3008 & 12	Surf. Sgl or Two Fuse			\$5.95	\$8.75		
D3038 & 43	Flush			5.95	8.75		
DS4304-6-8-12	Surf.	4.95	7.00	9.10	14.45		
DS3904-6-8-12	Flush	4.95	7.00	9.10	14.45		

### KILLARK

Standard Flush Type Panels	2	4	6	8	10	12
Series KRP-2 to 12 Inclusive	\$2.00	\$2.90	\$4.75	\$6.50	\$8.50	\$10.75

### CUTLER-HAMMER—Fuse Panels—Flush Mounting

#### All 30 Amp.

Circuits	2 Cir.	4 Cir.	6 Cir.
Black Finish Series 4355 H1 to 6	\$ 1.60	\$ 2.60	\$ 4.65
Aluminum Finish Series 4355 H1 to 6	2.40	3.45	5.35
Circuits	8 Cir.	10 Cir.	12 Cir.
Black Finish Series 4355 H1 to 6	\$ 5.20	\$ 9.95	\$10.20
Aluminum Finish Series 4355 H1 to 6	8.65	10.95	11.65

## G. E. or TRUMBULL—Residence Panel Boards

Surface or Flush Mounting	4	6	8	10	12
Single No 3104 to 3312	Circuit	Circuit	Circuit	Circuit	Circuit
Flush Mtg. or Fusing					
2906 to 2912	\$2.80	\$ 4.55	\$ 9.65	\$11.25	\$13.00
Double No. 3404 to 3412					
Flush Mtg. or Fusing					
2704 to 2712	9.10	12.40	16.15	23.10	26.40

### SQUARE D—Fuse Cabinets

Series 37000 to 39000	2	4	6	8	10	12
Flush Series 37000 Black	Circuit	Circuit	Circuit	Circuit	Circuit	Circuit
	\$1.85	\$2.50	\$4.50	\$7.90	\$ 9.50	\$11.15
37000 Aluminum	2.35	3.35	5.10	8.30	10.00	11.15
Surface Series 39000 Black	1.85	2.50	4.50	7.90	9.50	11.15

NOTE: 2 & 4 Circuit Flush Type arranged for mounting direct to front side of studding with channels for lathe ends, each.....\$0.20

### Combination Fuse Cabinets

60 Amp. Fuse Break and 30 Amp. Circuits	2	4	6	8
Flush Mounting Aluminum	Circuit	Circuit	Circuit	Circuit
	\$7.45	\$12.40	\$14.00	\$14.85
Surface Black	6.45	10.75	11.55	12.40

### WADSWORTH Fuse Cabinets & Panelboards

All Dead Front Single Fusing	2	4	6	8	10	12
Surface Mtg.	Circuit	Circuit	Circuit	Circuit	Circuit	Circuit
	\$2.30	\$3.00	\$4.85	\$5.75	\$7.55	\$11.55
Flush Mtg. Hanger Support	2.85	3.80	6.10	7.55	10.20	12.00
Flush Type for Tyle Sw.	8.55	11.10	13.75	16.40	19.85	
Surface Mtg. Enc. Panel Boards 100 Amp.			16 Circuit	20 Circuit	24 Circuit	
Flush			\$22.00	\$25.35	\$32.00	
			24.75	28.00	34.65	

### WESTINGHOUSE Junior Residence Type

Junior Residence Panels	2	3	4	6	8	10	12
No. K-64012-21 & 64052-61	Circuit	Circuit	Circuit	Circuit	Circuit	Circuit	Circuit
	\$2.50	\$2.70	\$3.75	\$5.35	\$9.75	\$10.30	\$11.70
Junior Building Panels for Toggle Switches							
No. K-64034-42 & 64074-81	6.60	9.90	13.20	15.70	19.80		
Pothead Compound Per Pound							.55

## PLATES & PLUGS, RECEPTACLE

### PLATES—For Flush Receptacles

Single or Duplex Plate	.040 Gauge	.060 Gauge
All Types	Bakelite	Lacquer B. Brass
Single or Duplex Plate	\$0.15	\$0.15
Lift Cover Plate 1 Outlet	.40	.55
Radio Plates Jack Type—Sgle. or Duplex	.20	.20
Telephone "One Outlet"	.20	.35
"Double"	.20	.45
Disappearing Door Plate Sgle. or Duplex	.75	1.15
Chapman Receptacle	.75	.75
Blank Plates One Gang	.20	.25
Bull's Eye Plate One Gang	.80	.70
"and 1 Switch Comb.	.90	.80
"and 1 Recept.	1.00	1.00
Switch and Sgle. or Duplex Recept.	.50	.55
Steel Plates for 30 and 40 Amp. Polarized Receptacles	.80	.80
Solid Brass Plates 30, 40 & 60 Amp.	1.65	1.65
Screwless Plates Bakelite for Hubbell Receptacles	.55	.55
Porcelain Enameled Plates for Sgle. or Duplex Receptacles	.25	.25
Mirror Glass Plates for Single Receptacle	1.00	1.00
Deluxe Metal Plates for Single or Duplex Receptacles	2.35	2.35
Deluxe Wood Inlaid Plates for Single or Duplex Receptacles	2.35	2.35

### CAPS & PLUGS For Receptacles

10 Amp. Pony Bakelite Cap	Price
10 " Standard	\$0.10
10 " Cap With Extension Knob	.10
10 " Brass Covered Cap	.45
10 " Steel	.20
10 " Cord Grip Cap	.30
10 " Tandem Blade Compo. Cap	.25
Radio Jack Plug	.45
Radio Plug For #2144 Receptacle	.25
Chapman Plug Compos.	.75
Chapman Plug Porcelain	.90
Disappearing Door Plug Brass Top	1.20
10 Amp. 2 Wire Polariz. Comp. Cap.	.25
10 " 2 " Cord Grip Cap	.35
20 " 2 " Comp.	.55
20 " 2 " Cord Grip	.85
30 " 2 " Comp.	.90
30 " 2 " Cord Grip	1.65
10 " 3 " Cord Grip	.45
20 " 3 " Comp.	.70
20 " 3 " Cord Grip	.70
30 " 3 " Comp.	.65
30 " 3 " Cord Grip	1.75
40 " 3 " Heavy Duty Angle Cap	2.40
60 " 3 " With Cord Grip	2.10
110 Volt 2 CP S8 Carbon Lamp for Bull's Eye Receptacle	.65
110 Volt 2 CP S7	.40

## RECEPTACLES, FLUSH

### STANDARD RECEPTACLES OR CONVENIENCE OUTLETS

Without Plates	Plates Extra	Price
Shallow Bakelite Side Wired	Single	\$ .20
" " " " " "	Duplex	.30
" " " " " "	Single	.30
" " " " " "	Duplex	.40
Deep Bakelite Top	Single	.40
" " " " " "	Duplex	.50
" " " " " "	Single	.35
" " " " " "	Duplex	.45
Shallow Bakelite Side	Single	.15
" " " " " "	Duplex	.20

These prices apply only to the United States



**SUNDRY RECEPTACLES**  
**Plates Extra Except Where Marked "X"**

	Price		Price
For Lift Cover Plate Single.....	\$0.50	Disappearing Door Recep. Single.....	\$1.00
Duplex.....	.70	Duplex 1.50	
Duplex Separate Feed Com. Gr.....	.40	Screwless Plate Recep. Single.....	.45
xSyle. With 3 1/4" Box Cover.....	.30	Duplex.....	.60
xDup. " 3 1/4".....	.45	10 Amp. Pol. 2 Wire Single.....	.35
xSyle. " 4".....	.55	" " " ".....	1.45
xDup. " 4".....	.60	" " " ".....	1.50
xSyle. " Small Brass Pl.....	1.30	" " " ".....	3.25
" Large.....	1.30	" " " ".....	1.50
Edison Screw Base Recep. Single.....	.30	" " " ".....	1.70
Chapman Receptacle.....	.90	" " " ".....	3
Radio Single.....	.85	40 Amp. Polariz. 3 Wire.....	5.75
" Duplex.....	1.15	" " " ".....	6.00
Radio Recep. Aerial Ground & Power.....			1.50

## YAXLEY RADIO RECEPTACLES

No.	Description	Price	Brass Bakelite
135	Loud Speaker.....	\$0.90	\$0.90
A242	" " with Duplex AC Receptacle & Box.....	2.50	2.50
242	" " AC Receptacle.....	2.00	2.00
A133	Antenna & Ground with AC Receptacle & Box & 2 Plugs..	1.70	1.70
133	" " " & 2 Plugs.....	1.35	1.35
A36	" " Receptacle.....	.00	.00
136	" " with 2 Plugs.....	.75	.75
A241	" " Dup. AC Rec. & Box & 2 Plugs.....	2.50	2.50
241	" " " & 2 Plugs.....	2.00	2.00
A256	" " " & Box & 2 Plugs.....	2.00	2.00
256	" " " & 2 Plugs.....	1.50	1.50

### RECEPTACLE COMBINATIONS—With Plates

Pilot Light-Plate a Single Outlet Comp.	\$2.10
Duplex	4.25
Switch and Bull's Eye	3.65
Recept. Only With Plate	1.35
Switch and Plate 10 Amp. Sgle. Out. Comp.	1.90
20	2.20
Habbell Switch Tap Combinatica Screw Plate #7093-Recep. #7163	1.70

## RECEPTACLES, PORCELAIN

## ALABAX RECEPTACLES AND FIXTURES

**Symbols:** Column No. 1—Number of Alabax Fixture.  
Column No. 2—Resale Price Standard White Glaze Finish.  
Column No. 3—Resale Price All Over Color B-D-E-F-G-H-J-K-L-M.  
Column No. 4—Resale Price Stripe Decoration No. 1A-2A-4A.  
Column No. 5 and 6—Resale Price Stripe Decoration T and U.

Column No. 1 Number	Column No. 2 White	Column No. 3 Color	Column No. 4 Stripe	Column No. 1 Number	Column No. 2 White	Column No. 3 Color	Column No. 4 Stripe
AL 814	\$2.75	\$3.15	.....	AL1469-70	\$3.00	\$3.30	\$3.45
845	3.00	3.50	.....	1471	2.10	2.35	2.55
846-53	2.90	3.35	\$3.50	1475-76	2.10	2.35	2.55
847	3.15	3.65	1.40	1477	2.10	2.35	2.55
848	2.00	2.25	2.40	2007-9	1.40	1.70	1.85
849-50	2.45	2.75	2.90	2008-10	1.55	1.80	1.20
851	1.50	1.75	1.90	2011-12	1.25	1.50	1.70
852	2.60	3.05	3.50	2013	1.70	2.00	2.20
859-63	1.95	2.25	2.40	2014	1.85	2.15	2.30
864	2.20	2.55	3.10	2015	1.55	1.85	2.00
865	2.65	3.05	3.45	2016	1.55	1.80	1.90
866	2.45	2.90	.....	2469	3.10	3.55	4.00
867	2.80	3.25	.....	2471	2.70	3.15	3.60
869-70	2.60	2.85	3.05	2669	3.95	4.40	4.85
871	1.65	1.90	2.10	2671	3.40	3.85	4.30
872	2.45	2.90	3.35	2846	3.08	3.55	4.00
873	2.80	3.25	3.70	2847	3.95	4.40	4.80
875	2.45	2.70	2.90	2852	2.85	3.30	3.75
876	1.95	2.20	2.45	2853	1.40	1.60	1.80
919-20-221-70	2.00	2.15	2.15	2864	2.45	2.90	3.40
921	.75	1.00	1.20	2865-72	2.80	3.25	3.70
923	2.45	2.70	.....	2873	3.10	3.55	4.00
924	2.10	2.35	.....	2990	2.20	2.50	.....
929-30	2.05	2.30	2.50	2991	1.60	1.90	.....
949-50	2.10	2.40	2.60	3100	2.45	2.90	3.35
951	1.15	1.40	1.60	3101	2.40	2.65	2.90
952-62	2.10	2.40	2.60	3103	1.85	2.30	2.75
960	1.05	1.35	1.50	4070	1.50	1.75	.....
969-70	2.25	2.55	2.75	4071	1.30	1.55	.....
971	1.30	1.60	1.75	4072	1.55	1.80	.....
980-83	1.70	2.00	2.20	4073	1.35	1.60	.....
984	1.50	1.75	1.95	0826-30	2.20	2.50	2.65
989	1.95	2.25	2.45	0896	2.40	2.65	2.80
1200-02	1.70	2.00	2.30	9006	2.45	2.75	2.90
1201-03	1.85	2.10	2.30				
1273	.50	.65	.75				
1274-75	.90	1.05	1.10				
1276	.20	.30	.40				
1300-01	2.70	2.90	3.25				
1349-50	2.75	3.05	3.20				
1351	1.75	2.05	2.20				
1352	2.30	2.55	2.85				
1371	1.95	2.25	2.40				
1449-50	2.85	3.10	3.30				
1451	1.85	2.15	2.35				

The above Prices do not include Glassware or Lamp

## RECEPTACLES, SURFACE

### STANDARD RECEPTACLES or Lampholders

## Keyless Porcelain

### Standard Base

Pony Cleat	Receptacle No. S. H. Groove	Side Screws	10704	10705	10706	10707
Round		Center	0171	20	0171	20
Standard Cleat		Side	28795	35	28795	35
			9402	30	9402	30
	With		4013	40	4013	40
	Brass Shell		9403	50	9403	50
Concealed	No. S. H. Groove		4000	45	4000	45
			4001	55	4001	55
Gblong	With		58300	50	58300	50
Round			8105	45	8105	45
	Removable Rings		50744	50	50744	50
Oblong	S. H. Groove for 5/16"		40286	50	40286	50
Mogul-P & S No. 520	Arrow 5012	Hubbell 3464	G.E. 1194	95		
Miniature or Candelabra	Receptacle (Small Type)		9445-6	21		
	Extended Type		387	35		

**OUTLET BOX RECEPTACLES or Lampholders**  
Pull and Keyless—Porcelain and Brass Shell

### Standard Base

Porcelain Pull Cord Chain for 3 $\frac{3}{8}$ " & 4" Box.....	\$1.85
Brass Shell " " 3 $\frac{3}{8}$ " & 4" .....	2.15
Porcelain Keyless for 3 $\frac{3}{8}$ " Box.....	.30
" " " " 4" .....	.45
Brass Shell " " 3 $\frac{3}{8}$ " & 4" Box.....	.85
One Piece Porc. Pull Cord or Ch. 3 $\frac{3}{8}$ " Box.....	.90
" " " " 4" .....	1.00
" " " " Keyless 3 $\frac{3}{8}$ " .....	.70
Two " " Pull with 7" Ch. 3 $\frac{3}{8}$ " .....	.40
" " " " Ch. & Cord 3 $\frac{3}{8}$ " .....	.40
" " " " Ins. 3 $\frac{3}{8}$ " .....	.45
" " " " 7" Chain 4" .....	.45
" " " " Ch. & Cord 4" .....	.60
" " " " Ins. 4" .....	.60
Keyless Mounted Blk. Metal Cov. 3 $\frac{3}{8}$ " Box.....	.30
" " " " Galv. 3 $\frac{3}{8}$ " .....	.30
" " " " Blk. 4" .....	.35
" " " " Galv. 4" .....	.35

### T-SLOT BOX RECEPTACLES—Surface Type

10	Amp. Standard receptacle.....	\$0.55
10	" " " " " " " " " " " "	.55
10	Receptacle with Covered Term.....	.65
20	Polarized Receptacle.....	1.00
10	Sgle. Porc. Rec. for 3 $\frac{1}{8}$ " Box.....	.45
10	Duplex " " " " " " " " " "	.50
10	Sgle. " " " " " " " " " "	.55
10	Duplex " " " " " " " " " "	.65

## T-SLOT HEAVY DUTY & POLARIZED

### Cleat and Concealed Bases

10 A. Small Concealed	2	Wire.....	\$ .55
10 A. Small Cleat	2	".....	.55
10 A. For Wood Molding	2	".....	.60
10 A. Polarized Cleat	2	".....	.80
10 A. Polarized Concealed	2	".....	.80
10 A. Polarized Wood Molding	2	".....	.80
10 A. Fielding Receptacle	2	".....	.90
10 A. Polarized Concealed	3	".....	.90
20 A. Polarized Cleat	2	".....	.90
20 A. Polarized Concealed	2	".....	.90
20 A. Polarized Wood Molding	2	".....	1.05
20 A. Polarized Concealed	3	".....	1.10
30 A. Polarized Concealed	3	".....	1.85
40 A. Polarized Porcelain	3	".....	1.60
40 A. Polarized Composition	3	".....	1.80
Porc. Sub. Base for 40 Amp. Rec.....			.20

### CANOPY OR FIXTURE RECEPTACLE

Pull for Ceiling Ring 7" Chain.....	\$0.35
" " " " 4" Cord.....	.35
" " " " Chain & Ins.....	.40
" " " " & Cord.....	.40
" " " " 3 ft. Chain.....	.60

### SIGN RECEPTACLES—Standard Base

### Keyless Removable Ring

Stand. Shallow	Screw Term.	\$0.30
	Covered	.35
	With 6" Wire Lead	.40
	5' to 6' Groove	.35
Competitive Shallow	Screw Term.	.25
	Covered	.25
	No. 14 Wire Lead	.20
Deep Type With Screw Term.		.20
	Covered	.25
	No. 18 Wire Lead	.30
Standard Deep	Screw Term.	.25
	Covered	.30
	No. 18 Wire Lead	.35

Intermediate Base

Intermediate Base		Price
Porcelain Cleat Receptacle.....		\$ .25
" " " 2 Screw.....		.30
" " with Spring Stud.....		.25
" " Removable Ring.....		.30

## R-SUNDRIES

### STANDARD ROSETTES—Porcelain

[illegible]

		For	For
Box Type—1 Piece Rosette Screw Terminal.....	3 1/4"	Box	4" Box
1 Without Terminal.....		\$.40	\$.50
		.20	.30

For Special Condulet Rosettes—See Pages PL-10, 11 and 12.

## GROUND RODS

Size		Copper-weld	Galvanized Not Wired	Galvanized Wired	Size		Copper-weld	Galvanized Not Wired	Galvanized Wired
	Ft.	Price	Price	Price		Ft.	Price	Price	Price
1/2"		\$ .85	.....	.....	1/2"		\$2 .85	.....	.....
3/8"		.65	.35	.....	3/8"		2.80	1.10	.....
1/2"		1.20	.50	\$ .65	1/2"		3.40	.....	.....
3/4"		1.40	.55	.70	3/4"		2.50	.....	.....
1"		1.80	.....	.....	1"		3.00	.....	.....
1 1/2"		2.30	.....	.....	1 1/2"		4.80	.....	.....
2"		1.80	.....	.....					

*These prices apply only to the United States*

Electrical Contracting, December, 1931



### RAWLPLUGS—Standard Types

Rawlplugs for Lag Screws						
Size of Lag Screw	Size Drill Hole	Size of Rawlplug	Price Each			
			1 1/2"	2"	3"	3 1/2"
			\$ .13	\$ .15	\$ .18	\$ .20
			.14	.17	.20	.23
			..	.20	.23	.26
			..	..	.27	.30
						\$ .30

NOTE: For Expansion Shields—See Page PL-10.

### Electric Range Units for Replacements Purposes

### METAL REFLECTORS — Glassteel Diffusers

	18"	30"	24"	18"	20"	24"
Threaded Pendant Hood.....	\$ 9.95	\$13.80	.....	\$10.50	\$14.65	.....
Ceiling Hood.....	9.95	13.80	.....	10.50	14.65	.....
Detachable Can. Ceiling Hd.....	10.25	14.10	.....	10.82	14.95	.....
Detachable Can. Ceiling Hd.....	10"	12"	16"	10.75	14.95	.....
Globes Only.....	3.50	3.95	7.50-1000, 24"	3.10	4.50	7.50-1000, 24"
Globes.....	100-200 W. 10"	300-500 W. 12"	750-1000, 16"	100-200 W. 10"	300-500 W. 12"	750-1000, 16"

NOTE.—150-200 W., 18"; 300-500 W., 20"; 750-1000, 24".  
Globes: 150-200 W., 10"; 300-500 W., 12"; 750-1000, 16".

**Prices do not include holders or sockets**

Style	For Lamp Size	Diameter Bowl	With Plain Collar for Shade Holders	With Screw Neck for Reflector Sockets	Complete With Sockets
			Price	Price	Price
<b>R. L. M. DOME TYPE</b>	25-40 W.	10"	\$1.40		....
	50-60 "	12"	2.00	\$2.20	\$3.85
	100 "	12"	2.10	2.35	3.65
	150 "	14"	2.45	2.65	3.90
	200 "	16"	2.90	3.10	4.75
	300-500 "	18"	4.00	4.20	....
	750-1000 "	20"	5.85	6.40	....
<b>DEEP BOWL TYPE</b>	25-40 "	5"	1.25		....
	50-60 "	7"	1.70		3.20
	100 "	8 1/2"	2.25	2.00	3.45
	150 "	9"	2.00	2.20	3.65
	200 "	10"	2.45	2.65	4.20
	300-500 "	12"	4.00	4.20	....
	750-1000 "	15"	4.90	5.15	....
<b>SHALLOW DOME</b>	25-40 "	10"	1.40	1.80	....
	50-60 "	12"	1.60	2.00	3.65
	100 "	12"	1.60	2.15	3.90
	150 "	14"			4.20
	150 "	15"	2.80	3.10	....
	200 "	16"	....	....	5.10
<b>ANGLE TYPE</b>	25-40 "	7"	1.30	....	....
	50-60 "	8"	1.60	....	....
	100 "	8"	1.60	2.50	....
	150-200 "	10"	2.15	3.05	....
	300-500 "	12"	3.85	5.05	....
	750-1000 "	15"	6.05	6.90	....
Holders for above—For Standard Brass Sockets.....Each \$0.25					
Sockets " " " " " Porc. or Alum. Sockets or Box Recept. .... " .25					
Sockets " " " " " Add 10% to manufacturers' list prices.					

750-1000	15	6.05	6.90	....
Holdings for above—	For Standard Brass Sockets	.....	Each	\$0.2
" " "	" " " " " " " " " " " "	.....	"	.2
Sockets	" " " " " " " " " " " "	.....	"	.2
	Add 10% to manufacturers' list prices.			

## SOCKETS

Pend.	36	36	36	36	36
-------	----	----	----	----	----

Complete With	Pend.	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{2}$	Ang.	Ang.	Crip.
	Cap	Brass	Brass	Brass	Brass	Brass	Sockets		
Key	.25	.25	.30	.45	.65	.75	.70	.4	
Keyless	.20	.20	.25	.40	.60	.70	.65	.4	
Pull	.30	.30	.40	.55	.70	.80	.75	.6	
Push	.25	.25	.30	.45	.65	.75	.70	.5	
<b>Electrician Brass Shell</b>									
Key	.30	.25	.40	.60	.....	.70	.80	..	
Keyless	.25	.30	.35	.55	.....	.65	.75	..	
Pull	.40	.35	.45	.70	.....	.80	.90	..	
Push	.30	.25	.40	.60	.....	.70	.80	..	
<b>Lever Pull</b>									
Pull	.50	.50	.....	.....	.....	.....	.....	..	
<b>Threaded Catch Brass Sockets</b>									
Key	.50	.50	.65	.70	.....	.....	.....	.7	
Keyless	.45	.45	.60	.65	.....	.....	.....	.6	
Pull	.65	.65	.80	.85	.....	.....	.....	.8	
Push	.50	.50	.65	.70	.....	.....	.....	.7	
<b>Cold Molded</b>									
Key	.55	.70	.80	.....	1.05	.....	1.65	.....	
Keyless	.50	.65	.75	.....	1.00	.....	1.60	.....	
<b>All Porcelain Sockets</b>									
Key	.55	.70	.80	1.00	.95	.....	1.35	.8	
Keyless	.50	.65	.75	.95	.90	.....	1.30	.7	
Pull	1.00	1.15	1.25	1.45	1.40	.....	1.80	1.2	
Push	.70	.85	.95	1.15	1.10	.....	1.50	.9	
<b>Lock Type Brass Shell</b>									
Key	.70	.70	.80	.90	1.05	1.20	1.15	.9	
Keyless	.65	.65	.75	.85	1.00	1.10	1.10	.8	
Pull	.75	.75	.85	.95	1.15	1.30	1.30	1.0	
Push	.70	.70	.80	.90	1.05	1.20	1.15	.9	

### CAPS For Above Sockets

## BODIES FOR STANDARD SOCKETS

## BODIES FOR STANDARD SOCKETS

	Key	Keyless	Pull	Through
Standard Brass Shell Body Only.....	\$ .20	\$ .15	\$ .25	\$ .20
Standard Electrolier Shell Body Only.....	.20	.15	.80	.80
Brass Shell Threaded Catch Body.....	.35	.30	.50	.35
Cold Molded Composition Body.....	.40	.35	.....	.....
All Porcelain Body Only.....	.40	.35	.85	.40
Lock Type Brass Shell Body Only.....	.65	.60	.75	.65

### BASES Only For Brass and Porcelain Sockets

Cleat Base For Op. Wiring.....	\$ .40
Concd. Base for Concd. Wiring—Small.....	.35
Brass Cov. Base Concd. Wiring—Small.....	.40
Brass Covered Base for 3/4" Box.....	.65
Brass Covered Base for 1" Box.....	1.00
Angle Concealed Base.....	.40
All Porcelain Cleat Base.....	.25
All Porcelain Concealed Large.....	.70
All Porcelain for 3/4" Box.....	.40
All Porcelain for 1" Box.....	.65

### BRASS BAYONET SOCKETS or Wall Sockets

Keyless Brass Shell with Small Conc. or Slotted Base.....	50717 & 18	\$ .43
" " " " Covered Base.....	60019	.75
" " " " Large.....	60020	1.00
Key " " " Small Concealed Base.....	6184	.70
" " " " Covered.....	60018	.80
" " " " with Removable Ring.....	50746 & 7	.70

### BRASS TWIN SOCKETS & ADAPTOR SOCKETS or Current Taps

Pull Adaptor Socket—No Outlet.....	\$1.18
Pull Adaptor Socket T Side Tap.....	1.40
Pull Twin Socket-Screw Side Outlet.....	2.00
Pull Socket $\frac{1}{8}$ " Cap T Side Tap.....	1.10
Keyless $\frac{1}{8}$ " Cap Side T Side Tap.....	.75
Key $\frac{1}{8}$ " Cap Side T Side Tap.....	.80

## WEATHERPROOF SOCKETS

Composition	Mica or Porcelain with Leads.....	\$0.25
"	Decorative Sockets for Temporary Work.....	.50
Porcelain	" " " " " ".....	.40

## CANDLE SOCKETS

Stand. Base Keyless Candle Socket with Rigid or Adjust. Hickey.....	\$ .10
" " Full Candle Socket with Rigid or Adjust. Hickey.....	.18
Std. Base Turn or Tumbler.....	.54
Levered Bracket Candle Sockets Lever Brass No. 103 to 120.....	.77
" " " " Porcelain No. 121-122.....	.79
" " " " Fibre No. 123-124.....	.77
" " " " Brass Lever No. 127.....	.77
Intermediate Base Pull Candle Socket with Paper Jacket.....	1.68
Intermedium Base Keyless Candle Socket Porcelain.....	.31
Candelabra Type Keyless Socket.....	.31
Candelabra Type Pull Chain Socket.....	1.58

### CANDELABRA OR MINIATURE SOCKETS

Keyless Candle Porcelain Male.....	\$ .40
" " Female.....	.30
Brass Shell 1/4 Cap.....	.50
Key Pull.....	.60
Brass Shell Push 1/4 Cap.....	1.00

## DIM-A-LITE & LO-LITE SOCKETS

No.....	23	23A	33	34	91
Price.....	\$1.00	\$1.25	\$1.25	\$1.25	\$1.5

### STANDARD BASE HUSK AND REFLECTOR T

Porcelain Keyless		Price
One Piece with Threaded Cap.....		\$ .60
One Piece with Angle Cap Threaded.....		.80
Two Piece Body Only.....		.90
Two Piece with 1/4 Brass Cap.....		.80
Two Piece with 1/2 Brass Cap.....		.80
Two Piece with Pendant Cord Grip.....		1.00

### INTERMEDIATE BASE Sockets

Brass and Weatherproof	
Key Socket $\frac{1}{4}$ Cap.....	\$ .65
Keyless Socket $\frac{1}{4}$ Cap.....	.60
Pull Socket $\frac{1}{4}$ Cap.....	1.15
Push Socket $\frac{1}{4}$ " Cap.....	80.6
Wpl. Socket Wire Leads.....	.3

## SOCKET ACCESSORIES

Adaptors for Socks—See Pages PL-4 and 18.	
Acorn Hubbell 5019-5982-7004—or Similar—Each.....	3.1
Acorn Luminous Hubbell 7015 Bryant 750 GE 860—or Similar—Each.....	3.0
Bushings Hard Rubber 3/4" Each .01c—3/4" Each.....	3.0
Chain for Pull Sockets—Per Foot.....	0.1
Cord for Devices—Right Type—Per Foot.....	0.1
Cord for Devices—Left Type—Per Foot.....	0.1
Extension—Benjamin No. 91.....	2.2
Handles for Sockets—Bryant 1240-1388—or Similar.....	2.2
Splicing Links Non-Insulating for Chain—Each.....	0.1
Splicing Links Insulating for Chain—Each.....	0.1

## SOCKETS, HEAVY DUTY

## MOGUL SOCKETS

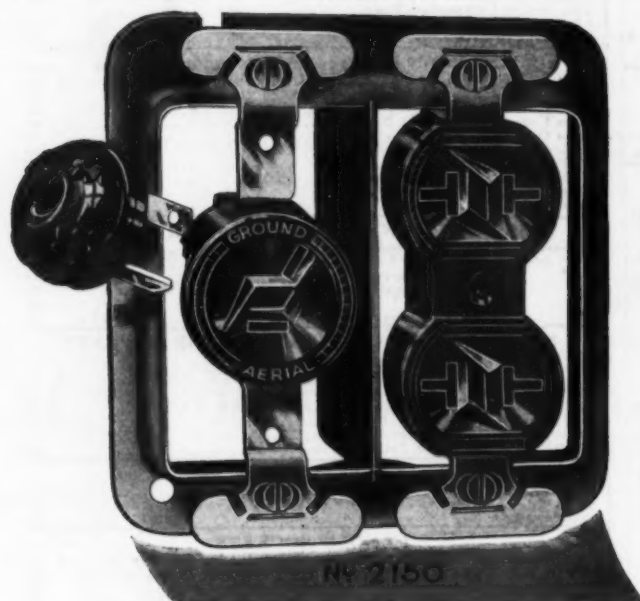
Arrow, Bryant, G. E., Hubbell, H. & H., P. & S., Weber

[illegible]

All Keyless		Body Only	with Iron Yoke	7 1/2 or 9 or 9 1/2 Alum. or Brass Cap
Porcelain One Piece Socket Mogul.....	\$ .65	\$1.00	\$1.40	
"    Two " .....	.85	1.40	1.60	
"    One " with Lead Wires.....	.85	1.40	1.60	
Brass Shell Keyless Mornl Socket 4 1/2 or 1 1/2 Brass Cap.....				

*These prices apply only to the United States*

# NEW **ARROW** Complete Line of



## RADIO OUTLETS

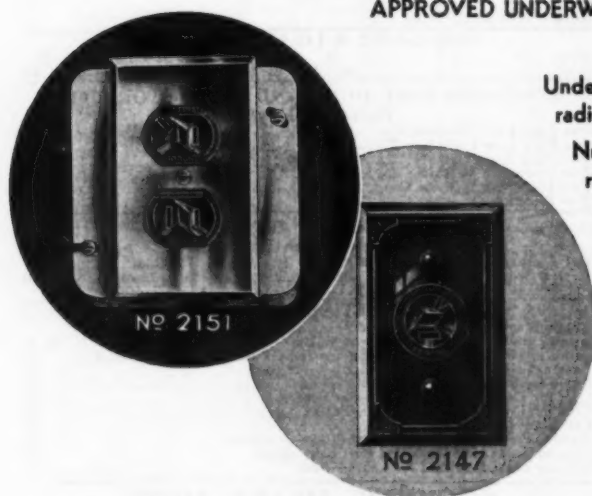
*Providing connections for*

**POWER·GROUND·AERIAL**

*with box cover and barrier*

*to meet the new requirements  
of the National Electric Code*

APPROVED UNDERWRITERS GUIDE CARD NO 361 A4 · SEPTEMBER 29, 1931



Underwriters have revised their requirements covering low tension radio circuit and power circuits in the same box.

Numbers 2150 and 2151 are specifically designed to meet these requirements for installation in standard 4" square outlet boxes. . . . . Furnished complete with box cover and barrier for easy installation.

Number 2147 for aerial and ground connections only, fits any standard switch box.

Receptacles take standard plates, brass or BAKELITE. Finding grooves in face of receptacle lead the plug fingers easily into place.

*These Outlets installed with MULTICOUPLER make complete radio receiving systems for apartments, hotels and institutions. Let us send you complete information.*

## ARROW ELECTRIC DIVISION

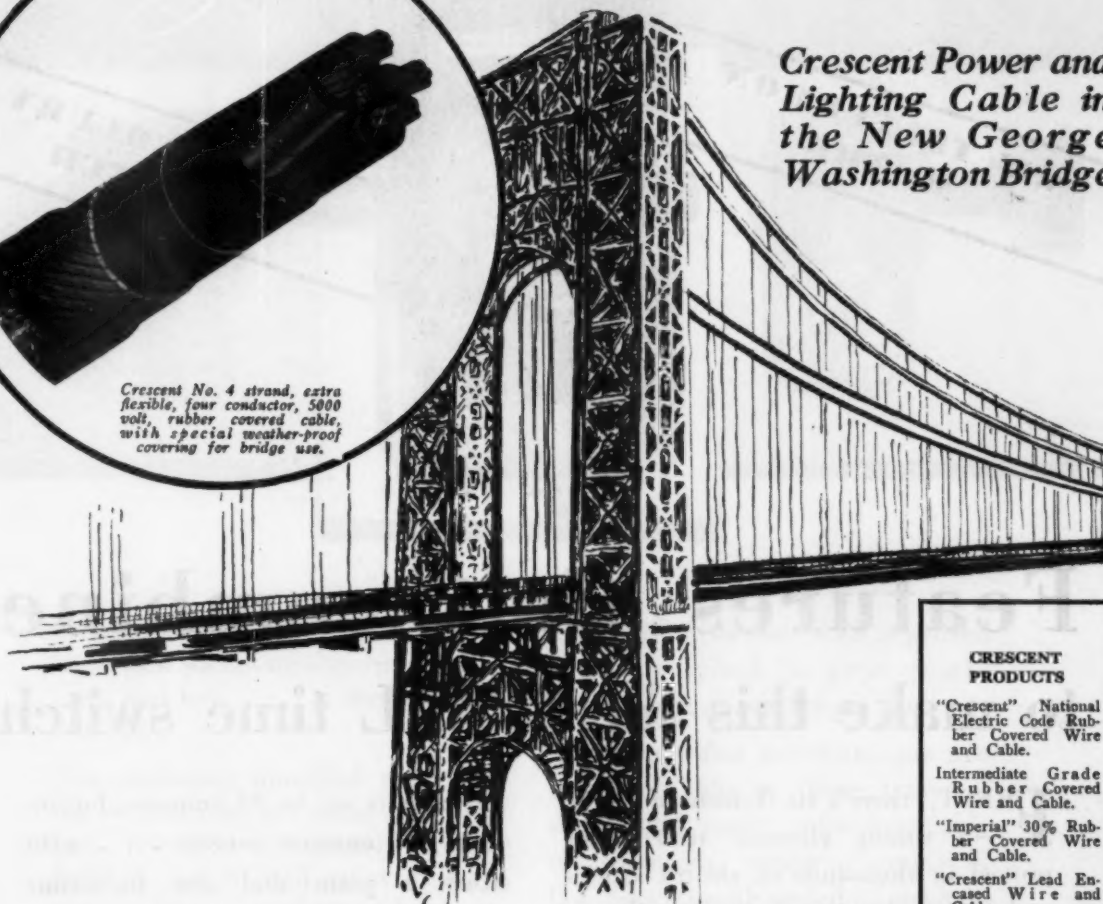
THE ARROW - HART & HEGEMAN ELECTRIC CO.

HARTFORD, CONN.

# CRESCENT'S Important Part in a Magnificent Achievement



*Crescent No. 4 strand, extra flexible, four conductor, 5000 volt, rubber covered cable, with special weather-proof covering for bridge use.*



*Crescent Power and Lighting Cable in the New George Washington Bridge*

The main power cable pictured above is a splendid example of Crescent enterprise and ability. Into it enter the experience and skill of nearly 43 years in the manufacture of every type of insulated wire and cable. In its perfected form it is the last word in weatherproof cable for severe conditions of exposure.

The Port of New York Authority specifications, which governed the construction of all wire and cable, required unusual flexibility, toughness and durability. Not only was it necessary for the cable to be extra flexible to allow for expansion and contraction of the great structure from season to season, but in its exposed position it must endure the extremes of heat, cold and moisture.

The Crescent Insulated Wire & Cable Co. was among the few concerns equipped to manufacture such a cable.

The Lighting Cables for illuminating the roadways, the approaches and associated buildings as well as the cables for the toll booths were manufactured exclusively in the plant of the Crescent Insulated Wire and Cable Co., in Trenton, N. J.

The completeness of the Crescent line assures you of one reliable source of supply for all your wire and cable needs. The cooperation of our Engineering Staff is freely offered on all special wiring problems.

To facilitate deliveries, complete stocks are carried at our plant in Trenton, N. J., and in the various cities where our sales representatives are located.

## CRESCENT PRODUCTS

"Crescent" National Electric Code Rubber Covered Wire and Cable.

Intermediate Grade Rubber Covered Wire and Cable.

"Imperial" 30% Rubber Covered Wire and Cable.

"Crescent" Lead Encased Wire and Cable.

"Crescent" A. B. C. Armored Bushed Cable.

"Crescent" Lead Covered Armored Cable.

"Crescent" Flexible Metallic Conduit.

"Cresflex" Non Metallic Sheathed Cable.

"Crescent" Varnished Cambric Cable, Lead Encased or Braided.

All kinds of special wires and cables.

TRADE MARK



Electrical Contractors  
Beach Electric Co., Inc.  
81 Wallace St., Newark, N. J.  
Hoffman & Elias, Inc.  
254 West 51st St., N. Y. C.  
Wimpey Electric Co.  
74 East 116th St., N. Y. C.

**CRESCENT**  
*Insulated Wire and Cable Co.*  
**CRESCENT ARMORED WIRE CO.**  
TRENTON N. J.



## THE NEW GENERAL ELECTRIC AUTOMATIC TIME SWITCH



## Features that combine to make this the IDEAL time switch

**F**IRST, there's its Telechron motor—a timing element tested and proved in thousands of electric clocks and other devices. Secondly, there's its mercury switch, the Kon-nec-tor, which assures long life and positive action. These—not to mention many other desirable features—combine to make this the ideal time switch.

Any number of operations a day . . . skip a day or more if desired. Five different switch combinations . . . for

a-c. circuits up to 30 amperes, for indoor and outdoor service . . . with either a plain dial (for fixed-time settings) or an astronomic dial (for sun schedules)—adapt this switch to every application.

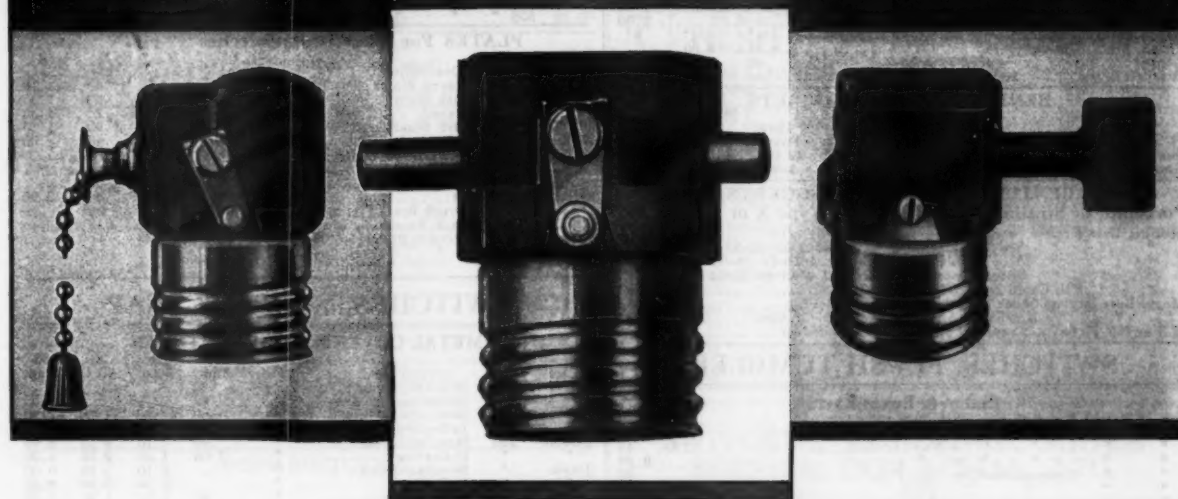
Our Bulletin GEA-1427 gives complete information. For a copy, address the nearest office of the General Electric Company or the General Electric Supply Corporation, distributor.

GENERAL  ELECTRIC

621-17

SALES AND ENGINEERING SERVICE IN PRINCIPAL CITIES

# NOW.. THREE NEW SOCKETS WITH *Sealed-In* MECHANISMS



General Electric now offers you three new socket mechanisms; pull, push and key . . . mechanisms *sealed-in*.

The enclosing moulded parts for the mechanisms are made of Textolite. Textolite is extremely strong, light in weight and in every way superior to porcelain which it replaces. Textolite construction seals in the mechanism and thereby protects the operating parts from dirt or injury.

The mechanisms are of an improved type, designed to give quick, smooth action and longer life.

These *sealed-in* mechanisms are now available in three types of shells and many interchangeable combinations. Order a supply of G-E Sockets with *sealed-in* mechanisms from your General Electric Distributor or write Section D-3212, Merchandise Department, General Electric Co., Bridgeport, Conn.

# GENERAL ELECTRIC

## WIRING DEVICES

MERCHANDISE DEPARTMENT, GENERAL ELECTRIC COMPANY, BRIDGEPORT, CONNECTICUT

	All Keyless	Price
1 Piece with $\frac{1}{8}$ or $\frac{3}{16}$ Nipple.....		\$0.65
1 " " Cord Grip.....		.60
1 " " $\frac{1}{4}$ Nipple.....		.80
2 " " $\frac{3}{16}$ Nipple.....		.80
2 " " Cord Grip.....		.80
<b>Shadeholders for above sockets.</b>		
24 Aluminum or Copper Extra.....		\$0.32
34 " " " "		.50

[illegible]

	Without Yoke	1/2" or 3/4" Iron Yoke	1/2" or 3/4" Alum. Yoke
One Piece Socket with Lamp Grip.....	\$1.00	\$1.15	\$1.50
Two Piece Socket with Lamp Grip.....	1.20	1.45	1.70

Porcelain or Snillar		With Type X or XR Fitting	
Medium Base Keyless	Tapped $3/4$ - $1/4$ X No. 4050-51 & 65.....	\$1.20	
" " "	Self-Locking $3/4$ - $1/4$ X No. 4529-29-30-32-33.....	1.60	
" " "	Shock Absorb. $3/4$ - $1/4$ X No. 4676-77-78-80-81.....	1.40	
" " "	Shock Absorb. Self Lock No. 4548-49-50-52-53.....	1.40	
" " "	Pull Chain No. 4534-35 & 4660-61-67.....	2.00	
Mogul Base Keyless	Shock Absorbing No. 4670-71-72.....	1.90	
" " "	Shock Absorbing No. 4673-74.....	1.90	
If X or XR Fitting not supplied on above sockets deduct.....		1.40	

<b>Platen &amp; Boxes Extra</b>						<b>Pric</b>
Square Handle Porcelain Cup—Sgl. Pole.....	.	.	.	.	.	.30
" " " " Dble. ....	.	.	.	.	.	1.10
" " " " 3 Way .....	.	.	.	.	.	.40
" " " " 4 Way .....	.	.	.	.	.	3.20
Composition Cup—Sgl. Pole.....	.	.	.	.	.	.90
" " " " Dble. ....	.	.	.	.	.	1.80
" " " " 3 Way .....	.	.	.	.	.	1.10
" " " " 4 Way .....	.	.	.	.	.	3.50
<b>COMPETITIVE</b> Porc. Cup — S. P. ....	.	.	.	.	.	.20
" " " " — W. P. ....	.	.	.	.	.	.20
Compo. 20 A.—S. P. ....	.	.	.	.	.	1.30
" " " " — D. P. ....	.	.	.	.	.	1.50
<b>HEAVY DUTY</b> " 20 A.—3 Way.....	.	.	.	.	.	1.60
" 30 A.—S. P. ....	.	.	.	.	.	1.70
" " " " — D. P. ....	.	.	.	.	.	2.30
" 30 A.—3 Way.....	.	.	.	.	.	2.30
<b>New Circuit Type</b>						
Two-2 Sgl. Pole Switches .....	.	.	.	.	.	\$1.40
Two-1 Sgl.—1 Three Way.....	.	.	.	.	.	1.50
Two-2 3 Way Switches.....	.	.	.	.	.	1.70
Triplet-3 Sgl. Pole Switches.....	.	.	.	.	.	2.10
Triplet-2 Sgl. & 1-2 Way Switches.....	.	.	.	.	.	2.20
Lock Type Porcelain Cup—Sgl. Pole.....	.	.	.	.	.	1.60
" " " " Dble. ....	.	.	.	.	.	2.30
" " " " 3 Way .....	.	.	.	.	.	1.60
" " " " 4 Way .....	.	.	.	.	.	4.90
<b>EXTRAS—For Luminous Tip add for Each Handle</b>						
For Glo Guide Handle Switches add for Each.	.	.	.	.	.	1.00

	Description	Price
6 A. S. P. Switch—Pilot Lt.—Textolite Plats.....		\$2.80
10 A. D. P. Switch—Pilot Lt.—.060 Plate.....		3.30
10 " " " Receptacle " " "		1.90
20 " " " 15A " " "		2.20
Switch—Tap & Receptacle with " .....		1.60

	1	2	3	4
Stamped Brass Sprayed Finish .040 Thick . . .	.10	.20	.30	\$1.10
"    "    Brush Brass .040 . . .	.15	.30	.45	1.30
"    "    Sprayed .060 . . .	.20	.40	.60	1.30
"    "    Brush Brass .060 . . .	.25	.50	.75	1.60
Bakelite Plate for Receptacle or Switch . . .	.15	.30	.45	.80
"    "    " 30 Amp. Tumbler Switch . . .	.25	.50	.75	

		Price
<b>Plate &amp; Boxes Extra</b>		
<b>Standard Shallow Type Porcelain Cup—Single Pole.....</b>		<b>\$0.45</b>
" " " " " "	Double .....	1.75
" " " " " "	3 Way .....	2.75
" " " " " "	4 " .....	3.75
<b>Deep Type Porcelain Cup—Single Pole.....</b>		<b>1.75</b>
" " " " " "	Double .....	3.75
" " " " " "	3 Way .....	4.75
" " " " " "	4 " .....	5.75

<b>Special High Grade Composition Cup—Single Pole.....</b>	<b>\$1.50</b>
" " " " " Double .....	1.85
" " " " " 3 Way .....	1.85
" " " " " 4 Way .....	2.20
<b>Lock Type Standard Porcelain Cup—Single Pole.....</b>	<b>1.90</b>
" " " " " Double .....	2.35
" " " " " 3 Way .....	2.35
" " " " " 4 Way .....	2.60
<b>Electrolite Non-Indicating.....</b>	<b>2.00</b>
" Indicating .....	2.35
<b>Extra for Luminous Button Add Per Switch.....</b>	<b>.40</b>

With Plates		Price
Bryant 117	D. P. Indicat. Switch Flush Receptacle & .060 Plate.....	\$3.50
413	One Push Switch-Bulls Eye and Solid Plate.....	4.80
518	Disapp. Door Recp. Bulls Eye—Solid Plate.....	5.80
415	D. P. Flush Switch & Pilot Lamp .060 Plate.....	3.90
467	Flush Switch—Flush Recep.—Bulls Eye—Solid Plate.....	6.15
558	Duplex.....	7 00

	1	2	3	4
Stamped Brass Sprayed Finish .040 Thick.....	\$ .15	\$ .30	\$ .45	\$1.10
" " Brush Brass .040 .....	.20	.40	.60	1.35
" " Sprayed .080 .....	.25	.50	.75	1.35
" " Brush Brass .080 .....	.30	.60	.90	1.60
Bakelite or Composition .....	.45	.90	1.35	.90
Bryant Deluxe Plate Wood Laid .....	2.75	4.70	7.70	.....
" " All Metal .....	1.00	1.75	2.45	.....
Guth Porcelain Plates .....	.25	.60	1.00	.....
Glass Mirror Plates .....	1.00	1.75	2.50	3.25
Blank Plate .040 Brush Brass Finish .....	.30	.60	.90	.....
Combination Switch & Receptacle Moulded .....	.80	.40	.....	.....
" Push & Receipt, Plates & Buttons .....	.50	.....	.....	.....
" " " " Mirror Enameled .....	.65	.....	.....	.....
" " " " Mirror Glass .....	1.75	.....	.....	.....

METAL COVERED SNAP SWITCHES							
Poles	Volts	Type	Size	5	10	20	30
Single	125	Non-Indicating.....	Pony	Amp. \$ .40	Amp. ....	Amp. ....	Amp. ....
"	"	Indicating.....	"	.45	...	...	...
"	"	Non-Indicating.....	Standard	.60	\$ .80	\$1.75	\$2.90
"	"	Indicating.....	"	.90	1.05	1.95	2.90
Double	250	Non-Indicating.....	"	.90	1.10	2.45	3.50
"	"	Indicating.....	"	1.05	1.25	2.55	3.50
Triple	"	Non-Indicating.....	"	"	3.10	5.10	6.00
"	"	Indicating.....	"	"	3.90	5.30	6.30
3-Way	125	Non-Indicating.....	"	.90	1.70	3.20	3.80
1-Way	"	Non-Indicating.....	"	1.55	4.00	...	...
Electrolier	"	Non-Indicating.....	"	"	2.10	...	...
"	"	Indicating.....	"	"	2.30	...	...

Poles	Volts	Type	Size	5 Amp.	10 Amp.	30 Amp.	30 Amp.
Single	125	Non-Indicating.....	Pony	\$ .30	.....	.....	.....
"	125	Indicating.....	"	.60	.....	.....	.....
"	125	Non-Indicating.....	Standard	.70	\$ .90	.....	\$3.00
"	125	Indicating.....	"	.75	1.00	\$2.45	3.25
Double	250	Non-Indicating.....	"	1.00	1.20	3.30	3.95
"	250	Indicating.....	"	1.10	1.40	3.25	\$ 7.75
3-Way	125	Non-Indicating.....	"	1.00	1.70	.....	.....
4-Way	125	Non-Indicating.....	"	1.80	3.80	.....	.....
Electrolier	125	Indicating.....	"	.....	2.30	.....	.....

	Metal or Composition Covers			
	Single Pole	Double Pole	3 Way	4 Way
125-250 Volt				
5 Amp. Closed or Slott. Base.....	\$ .40	\$ .95	\$ .90	\$1.50
5 Amp. with Outlet Box Cover 3½" or 4"	.60	...	1.00	...
10 Amp. Closed or Slott. Base.....	.90	1.25	1.35	...

	Metal Covered		All Porcelain	
	Non-	Non-	Non-	Non-
5 Amp. 125 Volts	Indicating	Indicating	Indicating	Indicating
Single Pole.....	\$ .65	\$ .60	\$ .75	\$ .70
Double *.....	1.30	1.10	1.25	1.15
Three Way.....	.....	1.00	1.20	.....
Electroliner.....	1.50	1.50	.....	.....

Handles—Standard Type Each	\$ .12	—Ratchet Type	.....	.2
Bases—Porcelain 5 Amp.	\$ .12	—10 Amp.	.....	.3
		—15—20 Amp.	.....	.3
Covers—10 Amp & Under Metal	\$ .15	—Porcelain	.....	.2
		Over 10 Amp.	.....	.3

PULL SWITCHES—BODIES ONLY		
Small Socket Type		
Ceiling—Bottom Pull.....		\$0.90
Wall—Side Pull.....		1.00
Rosette—Side Pull.....		1.00
Fixture—Bottom Pull.....		1.20
	1" Brass Cap.....	1.10
	1 1/2" Brass Cap.....	1.30
	2" Brass Cap.....	1.40
Addition	Small Cleat Base.....	1.40
for	Small Slotted or Concealed Base.....	1.30
Caps and Bases	Large Concealed Base.....	1.40
for	Wood Moulding Base.....	1.30
Above Switch	3 1/2" Box Base Brass Covered.....	1.50
Bodies	3 1/2" Box Base Brass Covered.....	1.50
	4" Box Base Brass Covered.....	1.20
	3 1/2" Box Cover with Ring.....	1.20
	4" Box Cover with Ring.....	1.20

*These prices apply only to the United States*

Electrical Contracting, December, 1931





METER SERVICE SWITCHES									
"Square D" Main Fuses Sealed Without End Walls									
		Meter		Test Type		Non-Meter		Test Type	
Amps.	Poles	Fused	Neutral	Number	Price	Number	Price	Number	Price
30	2	2 Plug	Fused	36211	\$ 3.50	16211	\$ 3.10		
30	2	2 " "	Fused	36231	3.50	16231	3.10		
30	2	2 " "	Fused	36231	3.70	16231	3.20		
30	2	2 Enc.	Fused	36251	4.10	16251	3.70		
30	2	2 " "	Fused	36271	3.80	16271	3.40		
30	2	2 " "	Fused	36271	4.30	16271	3.85		
60	2	2 " "	Fused	36252	12.90	16252	11.95		
60	2	2 " "	Fused	36272	12.00	16272	11.10		
60	2	2 " "	Fused	36272	13.75	16272	12.85		
100	2	2 " "	Fused	36253	21.25	16253	20.35		
100	2	2 " "	Fused	36273	21.25	16273	19.45		
100	3	2 " "	Fused	36273	23.00	16273	21.25		

UNIVERSAL METER SERVICE SWITCHES									
"Square D" Meter Service Types									
		Single Type		All 30 Amp. 125 Volt		Ganging Type		No. 12311-13111	
No. 32211 or 33211		\$3.70							\$4.15
No. 32311		4.00		Single Phase & DC		No. 12311			4.45
No. 34211		4.60		without end walls		No. 14311			5.65
No. 34311		5.25							

METER SERVICE SWITCHES									
"Square D" Without End Walls Live & Dead Fuse Type									
METER TESTING									
Number	Amps.	Pole	Fused	Neutral	Description	Price			
55211	30	2	1 Plug	Solid	Single Type Fuse Dead	\$ 2.85			
55211	30	2	2 " "	Fused	" " " " Live	2.95			
SK-916	30	2	1 " "	Solid	" " " " Dead	2.95			
55311	30	2	2 " "	Solid	" " " " Live	3.70			
57311	30	2	2 " "	Solid	" " " " Live	3.70			
15211	30	2	1 " "	" "	Gang Type Fuse Dead	2.80			
18211	30	2	2 " "	Fused	" " " " Live	3.35			
39231	30	2	1 " "	Solid	Gang Type Acces. M. Fuses	4.40			
39331	30	2	2 " "	" "	Gang Type Acces. M. Fuses	5.20			
15311	30	2	2 " "	Solid	" " " " Dead	4.15			
17311	30	2	2 " "	" "	" " " " Live	4.15			
58251	30	2	2 Cart.	Fused	Cartridge Fuse Live	3.30			
26251	30	2	2 " "	" "	" " " " Dead	4.05			
57351	30	2	2 " "	Solid	" " " " Live	4.05			
28252	60	2	2 " "	Fused	" " " " Live	8.45			
27312	60	2	2 " "	Solid	" " " " Live	8.90			
14312	60	2	2 " "	" "	" " " " Dead	10.80			
28253	100	2	2 " "	Fused	" " " " Live	15.05			
27313	100	2	2 " "	Solid	" " " " Live	15.95			
14313	100	2	2 " "	" "	" " " " Dead	27.30			

NON-METER TEST TYPE									
Number	Amps.	Pole	Fused	Neutral	Description	Price			
26311	30	2	2 Plug	Solid	Plug Type Fuse Dead	\$ 2.58			
26351	30	2	2 Cart.	" "	Cart. Type Fuse Dead	4.05			
SK-650	30	2	2 Cart.	Switched	Cart. Type Fuse Dead	4.60			
SK-600	60	2	2 " "	" "	Cart. Type Fuse Dead	11.70			
SK-674	100	2	2 " "	" "	Cart. Type Fuse Dead	19.20			

POLYPHASE METER SERVICE SWITCHES									
"Square D" Accessible Main Fuse Type									
METER TEST TYPE									
Number	Amps.	Pole	Fused	Neutral	Description	Price			
30391	30	3	3 " "	" "	" " " " Live	\$10.65			
30392	60	3	3 " "	" "	" " " " Live	20.35			
30393	100	3	3 " "	" "	" " " " Live	30.00			
NON-METER TEST									
Number	Amps.	Pole	Fused	Neutral	Description	Price			
10391	30	3	3 " "	" "	" " " " Live	\$10.05			
10392	60	3	3 " "	" "	" " " " Live	18.60			
10393	100	3	3 " "	" "	" " " " Live	28.25			
"Square D" Sealable Main Fuses									
METER TEST TYPE									
Number	Amps.	Pole	Fused	Neutral	Description	Price			
36351	30	3	3 " "	" "	" " " " Live	\$11.00			
36352	60	3	3 " "	" "	" " " " Live	17.80			
36393	100	3	3 " "	" "	" " " " Live	26.50			
NON-METER TEST									
Number	Amps.	Pole	Fused	Neutral	Description	Price			
SK-671	30	3	3 " "	" "	" " " " Live	\$ 4.60			
SK-672	60	3	3 " "	" "	" " " " Live	11.70			
SK-673	100	3	3 " "	" "	" " " " Live	19.20			

FITTINGS FOR STANDARDIZED SWITCHES									
End Walls for 30 Amp. Switches									
End Walls for 30 Amp. Switches									\$ .30
" " " " 60 & 100 Amp. Switches									.80
Trough Closing Plates No. 20533 & 34									.10
Connecting Trough No. 20733-3 1/2" Long									.45
Universal End Wall & Shutters									.80
" " " " Meter Shutter only No. 24358									.15

OUTDOOR METER BOXES									
No.	Description	Black	Galv. or Cad. Plated						
12601	With Test Block	\$ 7.25	\$10.00						
12621	Without Test Block	5.00	7.70						
12611	W. P. Meter Sw. Box	10.00							

TYPE C—"Square D" Single Throw, Industrial Switches									
Quick Break Only									
		250 Volts Fusible		575 V. AC with Arc Suppres.		Fused and Unfused			
Amps.	Pole	2 Pole	3 Pole	Amps.	Description	3 Pole	Price		
30	#85251	\$3.20	#85351 \$ 5.20	30	575V. Fused	46341	\$10.95		
60	#46252	\$8.20	#46352 10.00	30-60	575V. Not Fused	41342	10.95		
60	Solid Neutral	#47312	9.10	60	575V. Fused	46342	13.65		
100	#46253	\$12.70	#46353 15.50	100	575V. Not Fused	41343	17.30		
100	Solid Neutral	#47313	14.60	100	575V. Fused	46343	21.85		
200	#46254	\$30.00	#46354 26.40	200	575V. Not Fused	41344	29.15		
200	Solid Neutral	#47314	22.75	200	575V. Fused	46344	38.25		

TYPE A WITH ARC SUPPRESSORS									
"Square D", Industrial Quick Make & Break, Single Throw									
		230 V. DC. and AC. Fusible		250-600 V. DC. and 575 V. AC. Unfusible					
Amps.	Pole	2 Pole	3 Pole	Amps.	2 Pole	3 Pole	Price		
x30	#88251	\$10.80	#88351 \$13.65	x30	#84252	\$ 9.55	#84351 \$11.40		
60	#88252	13.65	#88352 16.20	30-60	#84252	12.75	#84352 15.95		
100	#88253	20.90	#88353 27.30	100	#84253	20.95	#84353 24.10		
200	#88254	36.40	#88354 40.95	200	#84254	28.20	#84354 34.60		
400	#88255	81.67	#88355 90.75	400	#84255	81.50	#84355 90.75		
600	#88256	107.25	#88356 127.85	600	#84256	118.00	#84356 132.00		
x60 Amp. Sw. with 30 Amp. Spacing								(x=250 Volts only).	

30 AMP. TYPE C									
"Square D", Quick Break, Industrial, Single Throw									
		250 Volts		Description		Single Throw			
No.	2 Pole	3 Pole	Price	Quick Make & Break	No. 83351	3 Pole	Price		
91251			2.65	Not Quick Break	91351		4.00		
x46251			7.75	Quick Break Only	x46351		10.00		
(x 60 Amp. Switches with 30 Amp. Clips).									

TYPE "C" SWITCHES									
Cutler-Hammer (T-V) Single Throw Industrial Type Series 4131									
		250 Volts DC or AC Fusible		575 Volts AC Fusible					
Amps.	Pole	2 Pole	3 Pole	Amps.	2 Pole	3 Pole	Price		
30	4131H2	\$ 3.20	4131H3 \$ 5.20	30	4131H24	\$10.90	4131H24 \$18.20		
60	4131H3	8.20	4131H14 10.00	60	4131H25	13.65	4131H25 20.00		
100	4131H4	12.75	4131H15 15.50	100	4131H26	21.85	4131H26 36.40		
200	4131H5	20.00	4131H16 26.40	200	4131H27	38.25	4131H27 61.90		
400	4131H6	49.15	4131H17 67.35						
125-250 Volt Solid Neut. Fusible Non-Fusible Type 250 DC 500-600 AC									
Amps.	Pole	2 Pole	3 Pole	Amps.	2 Pole	3 Pole	Price		
30	4131H39	\$ 6.75	4131H44 \$ 8.20	x30	4131H54	\$ 3.20	4131H58 \$ 4.10		
60	4131H40	9.00	4131H45 11.40	60	4131H55	8.20	4131H59 8.65		
100	4131H41	14.60	4131H46 20.50	100	4131H56	10.90	4131H60 12.30		
200	4131H42	22.75	4131H47 31.85	200	4131H57	19.10	4131H61 22.75		
400	4131H43	63.70	4131H48 82.00	x30	Amp 250 Volts Only				

ENTRANCE SWITCHES, LIGHT TYPE						
Cutler-Hammer (T-V)						
		2 Pole		3 Pole		
Amps	Description	Numbers	Price	Numbers	Price	
30	For Plug Fuses.....	4141H1&2	\$ 1.65	4141H3-4	\$ 2.90	
30	2 Blades-2 Fuses.....			4141H5	2.25	
30	For Cartridge Fuses.....	4141H6&8	1.80	4141H9-10	3.60	
30	For 2 Cart. Blades-2 Fuses.....	H4141H7	2.75			
30	Non-Fusible.....	4141H9		4141H24	3.25	
60	For Cartridge Fuses.....	4141H12		4141H14	7.80	
60	For 2 Blades & 2 Fuses.....	4141H13	0.70	4141H14-15		
60				4141H16	7.45	
100	For Cartridge Fuses.....	4141H18	10.30	4141H19-20	12.65	
100	For 2 Blades & 2 Fuses.....			4141H21	11.90	



## Switches

## Switches

## TYPE "A" SWITCHES

## Single Throw—Series 4111

Non-Fusible 250DC or 500-600 AC

Amps	2 Pole	3 Pole	Amps	2 Pole	3 Pole
230 4111H748	9.55	4111H84811.40	200 4111H77428.20	4111H87834.60	
30-60 4111H75	13.65	4111H85 15.95	400 4111H78	51.90	4111H88 91.00
100 4111H76	20.95	4111H86 24.10			

250 V. only.

## MOTOR STARTING SWITCHES

## Manual Operated Cutler-Hammer

Single Pole Push Button with Overload Protection

Type of Switch	Type of Relay	Number	115 V.	110 V.	220 V.	Cycles	Price
Open.....	Fast Trip	9101H1	1/4 H. P.	1/4 H. P.	1/4 H. P.	25-60	\$2.85
Enclosed....	"	9101H2	"	"	"	"	3.70
Open.....	Slow	9101H54	"	"	"	"	2.85
Enclosed....	"	9101H55	"	"	"	"	3.70

Series	Description	Amps	Volts	2 Pole	3 Pole	4 Pole
4151H1	Light Duty Motor Sw. 1/4 HP or Less	30	115	\$ 1.05		
9115H1	Motor Switch with Thermal Cutout	30	To 550	\$13.90	\$10.30	
4231H	For infrequent Duty	30	220	6.50	6.85	9.75
4246H	For infrequent Duty 5 HP.	30	220	12.55	13.20	16.65
4246H	For infrequent Duty 7 1/2 HP.	30	440	19.65	20.40	24.10
4246H	For infrequent Duty 7 1/2 HP.	60	220	17.30	19.65	26.85

## SMALL ENTRANCE SWITCHES

## Trumbull Electric Closed or Open Ends

Numbers	Amps	Volts	Fusing	2 Pole	3 Pole
5790 EW Porc. Base.....	30	125	For 1 Plug Fuse.....	\$1.70	
5791-2-3-4 & 5893.....	30	125	" Plug Fuses.....	\$3.45	
5891-5892 Porc. Base.....	30	125-250	" " " " " "	1.85	2.40
13640-13641 Kappa.....	30	250	No Fuse-Slate Base.....	2.75	4.10
13642-43 & 13743 Kappa.....	30	250	For Enclosed Fuses.....	2.75	4.35
13221-13321 Quick Break.....	30	250	" " " " " "	3.55	5.20

## STANDARDIZED MAIN ENTRANCE SWITCHES

## Trumbull Electric Single Phase or DC Solid End Plate

Numbers	Amps	Volts	Fusing	2 Pole	3 Pole
16361 to 16368.....	30	125-250	For Plug Fuses.....	\$3.30	\$4.10
16371 to 16378.....	30	250	" Enclosed Fuses.....	3.65	4.40
16381 to 16388.....	60	250	" " " " " "	9.25	9.70
16391 to 16398.....	100	250	" " " " " "	15.85	16.75

## STANDARDIZED METER SERVICE SWITCHES

## Trumbull Electric For Meter Testing Open End Without End Walls

Numbers	Amps	Volts	Fusing	2 Pole	3 Pole
16300 to 16309.....	30	125-250	For Plug Fuses.....	\$ 2.95	\$ 3.75
16315 to 16324.....	30	250	" Enclosed Fuses.....	3.35	4.10
16330 to 16338.....	60	250	" " " " " "	8.45	8.90
16341 to 16348.....	100	250	" " " " " "	15.05	15.95

## ACCESSIBLE FUSE METER SWITCHES

## Trumbull Electric With Test Blades With and Without End Walls

Numbers	Amps	Volts	Fusing	2 Pole	3 Pole
18111.....	30	125	For 1 Plug Fuse.....	\$ 3.55	
18211-18311.....	30	125	" Plug Fuses.....	4.05	\$4.55
18121.....	30	125-250	" 1 Enclosed Fuse.....	3.95	
18221-18321.....	30	250	" Enclosed Fuses.....	4.90	4.90
18122-222-322.....	60	250	" " " " " "	15.50	16.75
18123-223-323.....	100	250	" " " " " "	24.65	26.40

## Without Test Blades

Numbers	Amps	Volts	Fusing	2 Pole	3 Pole
†18111.....	30	125	For 1 Plug Fuse.....	\$ 3.35	
†19211-19311.....	30	125-250	" Plug Fuses.....	3.70	\$4.05
†18121.....	30	250	" 1 Enclosed Fuse.....	3.95	
†19221-19321.....	30	250	" Enclosed Fuses.....	4.65	4.65
†19122-222-322.....	60	250	" " " " " "	14.50	15.85
†19123-223-323.....	100	250	" " " " " "	23.35	24.65

†No End Walls.

†With End Walls.

## SEALED FUSE METER SWITCHES

## Trumbull Electric With Test Blades With and Without End Walls

Numbers	Amps	Volts	Fusing	2 Pole	3 Pole
†15827.....	30	125	For 1 Plug Fuse.....	\$ 2.40	
†28111-28211-28311.....	30	125	" Plug Fuses.....	3.55	\$ 3.75
†28121.....	30	125	" 1 Enclosed Fuse.....	3.85	
†28221-28321.....	30	125-250	" Enclosed Fuses.....	4.10	4.35
†28122-28222-28322.....	60	250	" " " " " "	13.25	14.50
†28123-223-323.....	100	250	" " " " " "	22.00	23.75

## Without Test Blades

Numbers	Amps	Volts	Fusing	2 Pole	3 Pole
†29111.....	30	125	For 1 Plug Fuse.....	\$ 3.10	
†29211-29311.....	30	125-250	" Plug Fuses.....	3.10	\$ 3.30
†29121.....	30	125	" 1 Enclosed Fuse.....	3.45	
†29221-29321.....	30	250	" Enclosed Fuses.....	3.75	3.90
†29122-222 & 322.....	60	250	" Enclosed Fuses.....	12.35	13.65
†29123-223 & 323.....	60	250	" Enclosed Fuses.....	20.70	22.00

†No End Walls.

†With End Walls.

## UNIVERSAL METER SERVICE SWITCHES

## Trumbull Electric Without End Walls

Numbers	Amps	Volts	Fusing	2 Pole	3 Pole
†971-123.....	30	125	For 1 Plug Fuse.....	\$3.75	
972-123.....	30	125	For 1 Plug Fuse.....	4.70	
973-333.....	30	125	For 2 Plug " Solid Neu.....	\$4.10	
973-333.....	30	125	For 3 Combinations.....	5.30	5.30
979-333.....	30	125	For 4 Combinations.....	5.30	5.30

## POLYPHASE ENTRANCE &amp; METER SWITCHES

## Trumbull Electric

Series Nos.	Style	30 Amp.	60 Amp.
16379	Entrance—"DO-ALL"	\$ 4.70	
15321-15623	Acc. Fuse—Test Conn.....	11.60	\$21.10
17321-17623	Acc. Fuse without Test Conn.....	10.95	12.90
26321-26623	Sealed Fuse with Test Conn.....	11.50	14.40
Series Nos.	Style	100 Amp.	150 Amp.
15321-15623	Acc. Fuse—Test Conn.....	\$30.80	\$47.50
17321-17623	Acc. Fuse without Test Conn.....	29.05	33.45
26321-26623	Sealed Fuse with Test Conn.....	27.30	44.00

## ENTRANCE RANGE AND LIGHTING SWITCH

†18422-2W Switch with 1-60 A., 250 V. & 2-30 A. 125 V. Branches.....	\$23.00
18422-4W Switch with 1-60 A., 250 V. & 4-30 A. 125 V. Branches.....	23.80

## END WALLS, SHUTTERS, TROUGHS, ETC.

## Trumbull Electric

End Wall One Piece for Standardized Switches.....	30 A.	60 A.	100 A.
End Wall One Piece for Polyphase Switches.....	\$ .30	\$ .80	\$ .80
Shutters for End Walls for Standardized Switches.....	.15	.30	.30
Shutters for End Walls for Polyphase Switches.....	.15	.30	.30
Troughs 2-3" & 4....	\$ .40	5".....\$ .45	6".....\$ .50
			7".....\$ .55

## TYPE "A" INDUSTRIAL SWITCHES

## Trumbull Single Throw, Quick Make &amp; Break

Amp	2 Pole	3 Pole	AC Only	2 Pole	3 Pole
30.....	72221 \$10.05	72321 \$13.65	36221 \$ 9.60		
60.....	72223 13.65	72323 18.30	36223 11.85		
100.....	72223 20.95	72323 27.30	36223 20.00		
200.....	72224 36.40	72324 41.00	36224 25.50		

## Trumbull "SNUF-ARC" TYPE

Amp	Fusible	2P. 230-575	3P. 230-575	No Fuse	2P. 575V	3P. 230-575
30.....	AC & DC	72361 \$16.40	72361 \$20.00	AC & DC	36261 \$12.75	36321 \$11.40
60.....	AC & DC	72362 17.30	72362 21.00	AC & DC	36262 13.65	36362 15.95
100.....	AC & DC	72363 27.30	72363 31.85	AC & DC	36263 20.95	36363 24.10
200.....	AC & DC	72364 43.25	72364 52.80	AC & DC	36264 28.20	36364 34.60

\*230 V. A.C. no "Snuff Arc"

## TYPE "C" SWITCHES

## Trumbull Single Throw, Quick Make &amp; Break

Amp	2 Pole	3 Pole	AC Only	2 Pole	3 Pole
30.....	40221 \$ 5.50	40321 \$ 6.85	20221 \$ 5.00	20321 \$ 6.40	
60.....	40222 8.20	40322 10.00	20222 8.20	20322 8.65	
100.....	40223 12.75	40323 15.50	20223 10.95	20323 12.30	
200.....	40224 20.00	40324 26.40	20224 19.10	20324 22.75	

Amp	Fusible	2P. 230	3P. 230	230	3P. 230	4 Pole	3
60.....	AC-DC	44222 \$ 8.15	44322 \$10.00	43322 \$ 9.00	43422 \$11.85		
100.....	AC-DC	44223 12.70	44323 15.40	43323 14.50	43423 20.40		
200.....	AC-DC	44224 20.00	44324 26.30	43324 22.70	43424 31.75		

## WESTINGHOUSE

## All 30 Amp. Porcelain Base

"Midget"—S. N.—1 Blade—1 Fuse—	2 Pole	3 Pole
"Type 00"—Fusible—125-250 V.—Plug Fuses.....	60969 1.80	60961 \$3.00
"S. N. 1 Blade—1 Fuse—"	60901 1.75	62328 2.70
"S. N. 3 Blades—"		60962 3.00
"Not Fusible—2 Blades—250 Volt. 60990.....	2.55	62352 2.70
"Fusible Cart. Fuses—250 V.....	60989 2.45	62365 4.00
"S. N. 250 V.....		62368 4.30
"S. N. 250 V.....		62351 3.20
"S. N. 250 V.....		62364 4.30
"Type WK-45"—Fusible Cart. Fuses—3 Blades—250 V.....		545101 5.20
"Type WK-45"—S. N. Fusible Cart. Fuses—2 & 3 Blades—250 V.....	545301 5.20	545341 5.20
"Type WK-45"—Non-Fusible—2 and 3 Pole—3 Blades.....	545001 4.20	545001 4.20

## TYPE C METER ENTRANCE

## Westinghouse "WK-62" Quick Break

60 Amp.—230 Volts.....	2 Pole Fusible 3 Pole Fusible	4 Pole Fusible
62304 \$ 9.15	62305 \$10.90	62307 \$13.60
100 "230 ".....	62308 13.60	62309 17.25
200 "230 ".....	62312 21.80	62313 29.05

## SOLID NEUTRAL FUSIBLE

60 Amp.—3 Poles.....	2 Blades—2 Fuses 3 Blades—2 Fuses
62332 \$ 9.15	62306 \$10.90
100 "3 ".....	62330 14.55
200 "3 ".....	62331 22.70

## UNIVERSAL METER SERVICE SEALED MAIN FUSES

## Westinghouse "WK-57" Meter Testing

One & Two Circuit	All 30 Amp.	Four Circuit
57924 \$3.70	125 Volt For	57925 \$5.00
57926 4.05	Plug Fuses	57499 4.60
57928-31 3.60		57928 3.60
57498 5.25		57500 5.25

## STANDARDIZED METER SWITCHES

## Westinghouse "WK-54" Without End Walls

Amps	Fused	Dead Fuse Type	Live Fuse Type
30	For No. Price	2 Pole 3 Pole	2 Pole 3 Pole
30	Plug	61140 \$ 2.40	60224 \$ 2.95
30	"	61143 3.50	59441 2.95
30	Enclosed	61143 3.80	54371 3.30
30	"	61145 4.10	59448 4.05
60	"	61244 12.80	59461 8.40
100	"	61275 21.10	59463 14.95

## METER SERVICE AND ENTRANCE SWITCHES

## ACCESSIBLE FUSE TYPE

## Westinghouse "WK-65"

Amps	Fused	With Test Facilities	Without Test Facilities
30	For No. Price	2 Pole 3 Pole	2 Pole 3 Pole
30	Plug	65000 \$ 3.50	65010 \$ 3.30
30	"	65001 4.00	65011 3.65
30	Enclosed	65055 3.90	65063 3.90
30	"	65003 4.85	65004 4.85
60	"	65305 14.95	65306 15.85
100	"	65307 23.70	65308 25.45

These prices apply only to the United States





Every electrical man who has wiring jobs to handle should have these books . . . .

THOUSANDS of men in every part of the country are using the six big books of the American Electricians' Library to make their work easier and to push themselves ahead. If you, too, are determined to go further in electrical work, no matter what your position is now, you are invited to examine the American Electricians' Library for 10 days without any obligation to purchase it. Furthermore, if after you have examined these books you decide that they can help you as they have helped countless others, you can have Braymer and Roe's *Rewinding Small Motors* absolutely free.

Terrell Croft's

## American Electricians' Library

6 Volumes—over 2,000 pages—fully illustrated

\$1.50 in ten days and \$2.00 monthly for 8 months.

LET us send you these fact-packed books for ten days' free examination. There is no charge for the examination—no obligation to buy the books unless you want them. These books have helped, and are helping, so many men that it is no longer a question of "Will they help you?"—the question is "Will you let them help you?"

Terrell Croft's books on practical electricity are known and respected by experienced electricians throughout the world. This latest Croft library is packed full of practical data, diagrams, kinks, short cuts, helps—to supplement his previous books. These six books are written especially to help wiremen, trouble shooters, maintenance men, armature winders and electrical contractors.

The six books cover the whole wiring field. They give you concrete usable details about new and better ways of armature winding, conduit wiring, circuit testing, etc., telling you what experience has proved to be best, showing you what to look out for, what to avoid—outlining for you, step by step, the surest, quickest way of locating troubles and of remedying them.

We could fill several pages with arguments telling how so many thousands of men have profited by the American Electricians' Library. But we'd like to leave it to the books—and we'll stand or fall on the outcome of your examination. You will agree that this is a liberal offer; and, frankly, we couldn't afford it if this examination offer didn't usually convince. We know how good these books are—we want you to see them for yourself.

### A Valuable Book Absolutely FREE!

After you have seen these books at your leisure—after you have used them in your work—decide whether or not they are going to help you. Then, return the books or remit only \$1.50 and then \$2.00 a month until \$17.50 has been paid. On receipt of your first payment Braymer and Roe's *Rewinding Small Motors* will be sent you absolutely free.

## McGraw-Hill FREE EXAMINATION COUPON

McGraw-Hill Book Co., Inc., 330 West 42nd St., New York, N. Y.

Gentlemen: Send me for 10 days' free examination, all charges prepaid, the AMERICAN ELECTRICIANS' LIBRARY, 6 volumes. If I find the books satisfactory, I will send you \$1.50 in ten days, and \$2.00 a month until the Special Price of \$17.50 has been paid. If they are not what I want I will return them. Upon receipt of my first payment you agree to send me free a copy of Braymer & Roe's *Rewinding Small Motors*.

Signature .....  
Residence Address .....  
City and State .....  
Firm or Employer .....  
Occupation ..... E.C.12-31

What the six big volumes of this library offer you!

TERRELL CROFT prepared this subscription library for practical electricians. The six volumes bring to you exact step-by-step directions for the installation of every type of conduit wiring job—they tell you how to handle every kind of lighting circuit and switch problem—they give you short cuts to saving time on maintenance routine—they give you useful tips on electrical machinery erection—they offer you practical, clear explanations of all kinds of A.C. armature winding jobs—they bring you a thousand armature winding, electrical machinery, and control diagrams—they show you the surest, quickest methods of locating and remedying circuit troubles. They cover the countless problems you are confronted with daily.

### More than 1,000 wiring diagrams

The thousand wiring diagrams in these six books are alone worth the price of the entire library to any practical electrician. Many of these diagrams are unobtainable elsewhere; many more are very hard to get from any other source; all of them are much clearer and more helpful than most wiring plans available. They include:

- 300 lighting circuit diagrams, and a number of other practical working drawings
- 300 conduit-wiring diagrams
- 9 single-phase armature winding diagrams
- 52 two-phase armature winding diagrams
- 100 three-phase armature winding diagrams
- 570 electrical machinery and control wiring diagrams

This Library contains all the useful hows and whys and wherefores for wiremen, trouble shooters, armature winders, electrical maintenance men, and electrical contractors.

**FREE!**

if you act now



Braymer and Roe's *REWINDING SMALL MOTORS* comes to you absolutely free if you act now in getting your AMERICAN ELECTRICIANS' LIBRARY. This book will give you much practical information about rewinding all types and designs of fractional horse-power motors.

Mail this coupon →

# Speed Up the Job... with a Red Head Wrench

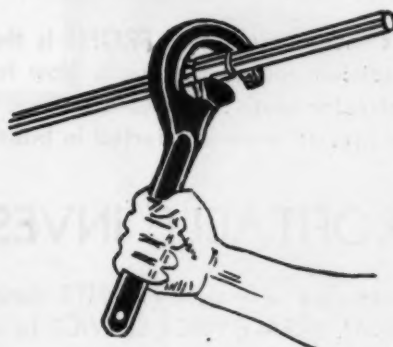
Here is new speed with one hand action. No adjusting—just drop the wrench on the pipe and pull. Your other hand is free to hold the pipe while the other hand turns it with the wrench.

This new tool is made from finest steel with extra hardened teeth that will last and last. The smooth, straight surface of the base will protect your pipe, and is a perfect cushion for the fulcrum of your leverage. The harder you pull, the tighter the grip.

Get this new speed producer and motion saver in your kit, now.

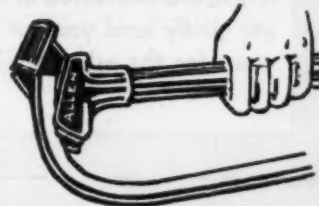
See "Steel City" complete catalogue, pages 67-90, inclusive, 1931 file Electrical Trade Catalogs. Remember this—"Steel City" SHERADIZED material is always available. Use the best.

## NO ADJUSTMENTS



Fits pipe, bars, nuts,  
etc., sizes  $\frac{1}{4}$  inch,  $\frac{3}{8}$   
inch,  $\frac{1}{2}$  inch,  $\frac{5}{8}$  inch  
and one inch.

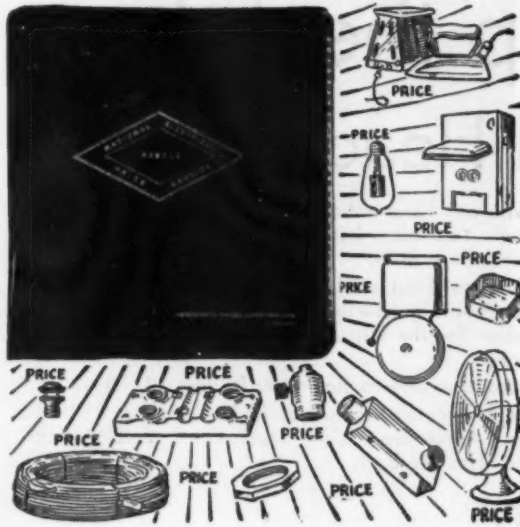
## ALSO THE ALLEN PIPE BENDER



No. 1 and No. 2 Allen Pipe Benders on the job take care of all sizes—no adjustments—no crushing, perfect curvature—save material, time; and eliminate accidents.

Write for "Steel City" catalogues.

**THE STEEL CITY ELECTRIC CO.**  
**PITTSBURGH - PA.**



# ELECTRICAL CONTRACTORS BACK TO PROFITS!

Contractors realize as never before that PROFIT is the only thing that will keep them in business! Reduced volume may be a blow to pride, but PROFIT heals all wounds. One contractor says, "We would be able to pay our bills now if we had begun using your Service when we started in business."

## A PROFITABLE INVESTMENT

If you have been dissatisfied with your PROFITS during the past year, put the NATIONAL ELECTRICAL RESALE PRICE SERVICE to work for you as your "Silent Partner." It will help you turn losses into profits.

## KEEPS YOU ON A SAFE COURSE

If you are interested in more profitable business rather than just more business, we will gladly send you our latest booklet "PROFIT—YOUR SILENT PARTNER." It's yours for the asking. Simply attach your letterhead to the coupon below.

Henderson-Hazel Corporation,  
5005 Euclid Ave.,  
Cleveland, Ohio.

Gentlemen:

Without obligation please send us your booklet, "Profit—Your Silent Partner."

Name.....

Address.....

City or Town..... State.....

EC-12-31



**T**HE exacting standards of General Electric as to the quality of materials used in its products is your guarantee that G-E Friction and Rubber Tapes assure greater service and more lasting protection Economical—G-E Tapes cost no more—use them on every electrical installation where dependable friction or rubber tape is required. Your nearest G-E Merchandise Distributor stocks a complete line of G-E Tapes. See him or write Section M-3212, Merchandise Department, Bridgeport, Connecticut.



GENERAL ELECTRIC HAS A TAPE  
TO MEET THE NEEDS OF EVERY  
ELECTRICAL REQUIREMENT

# GENERAL ELECTRIC

## TAPES

MERCHANDISE DEPARTMENT, GENERAL ELECTRIC COMPANY, BRIDGEPORT, CONNECTICUT

### POLYPHASE METER SWITCHES

#### Westinghouse "WK-54"—Sealed Main Fuses

Amps.	Fused For	Numbers	Price	Numbers	Price
30	60286—3 Pole—230 Volt AC—Less End Wall.	913123-911123	\$ 2.95	912333-914333	\$ 3.75
60	60287—3 " " " "	921223	3.30	922333-924333	4.05
100	60288—3 " " " "	921226	8.40	923336	9.90
		921231	14.95	924331	15.85

#### Westinghouse "WK-65"—Accessible Fuses

Amps.	Fused For	Numbers	Price	Numbers	Price
30	65100—Meter Test 3Phase 4W.-S.N. Non-Meter Test	65100	\$11.00	65143	\$15.00
60	65101—Less End Walls..	65101	20.20	65146	35.95
100	65102—Less End Walls..	65102	29.80	65141	46.45

### METER TRIMS—END WALLS—TROUGHS

#### For Meter Switches

Amps.	Fused For	Numbers	Price	Numbers	Price
30	66100—One Piece Meter Trims.	66100	\$10.90	66021	\$18.95
60	66103—Blank End Wall or Shutter Type End Wall.	66103	13.60	66024	30.90
100	66106—Shutter Type Meter Trim or Adapter Trim.	66106	20.90	66027	31.75
200	66109—New Universal Trim with Slide.	66109	36.30	66030	52.65

### "TYPE A" INDUSTRIAL SWITCHES

#### Westinghouse "WK-66"—Quick Make & Break

Amps.	Fused For	Numbers	Price	Numbers	Price
30	66100—250 V. DC—230 V. AC—Fusible	66100	\$10.90	66021	\$18.95
60	66103—3 Pole	66103	13.60	66024	30.90
100	66106—3 Pole	66106	20.90	66027	31.75
200	66109—3 Pole	66109	36.30	66030	52.65

### "TYPE C" INDUSTRIAL SWITCHES

#### Westinghouse "WK-97"—Quick Make & Break

Amps.	Fused For	Numbers	Price	Numbers	Price
30	597100—250 V. DC—230 V. AC—Fusible	597100	\$ 5.45	597151	\$10.90
60	597103—3 Pole	597103	8.15	597154	13.60
100	597106—3 Pole	597106	12.70	597157	21.80
200	597109—3 Pole	597109	19.95	597160	38.10

### ENTRANCE SWITCHES

#### Noark Closed Ends

Number	Amps.	Volt	Fuses	Blades	Neutral	2 Pole	3 Pole
8283	30	125	1 Plug	1	Solid	\$1.75	
8383	30	125	2 " "	2	Fused	1.80	
8393	30	125-250	2 " "	2	Solid		\$2.50
8683	30	250	2 N.E.C.	2	Fused	1.80	
8693	30	125-250	2 " "	2	Solid		3.20
8136-1	60	125-250	2 " "	2	Fused	6.65	7.25
8226-1	60	250	2 " "	2	Solid		11.00
8131-1	100	125-250	2 " "	2	Fused	10.25	

### METER SERVICE SWITCHES

#### Noark Sealed Service SECO Without End Walls

Number	Amps.	Volt	Fuses	Blades	Neutral	2 Pole	3 Pole
9543	30	125	1 Plug	1	Solid	\$2.40	
9563-9523	30	125-250	2 " "	2	Fused	3.50	
9563	30	125-250	2 N.E.C.	2	Solid	3.50	\$3.75
9533	30	125-250	2 " "	2	Fused	4.10	
9573	30	125	1 " "	1	Solid		4.30
9573	30	125	1 " "	1	Fused	3.80	
9576	60	250	1 " "	1	Solid	11.90	
9536	60	125-250	2 " "	2	None	12.80	
9536	60	125-250	2 " "	2	Solid		13.65
9561-9571	100	250	1 or 2 " "	1 or 2	None	21.00	
9531	100	125-250	2 " "	2	Solid		22.85

#### Noark Meter Service & Entrance ACCO Without End Walls

Amps.	Fused For	Numbers	Price	Numbers	Price
30A	Plug	9343	\$ 3.55	8343	\$ 3.30
30A	Enc.	9353	4.00	8353	3.65
30A	Enc.	9363	4.85	8363	4.60
60A	Enc.	9373	8.90	8373	3.90
100A	Enc.	9386	14.95	8386	14.10
		9391	23.70	8391	22.85

### ACCO Entrance Range & Lighting Switch

No.	Price	No.	Price
No. 6636RLA.. Range and Lighting Sw. 1-60A. 250V. and 4-30A. 125V.	\$23.80		
No. 6636RLB.. Range and Lighting Sw. 1-60A. 250V. and 6-30A. 125V.	26.25		
No. 30..... Meter Back Plate and Switch Support for above.	2.00		

### UNIVERSAL Meter Service Switches—No End Walls

Number	Blades	Fuses	Circuits	Fuses	Price
971123	1	1	2	2	\$3.75
9723-972123	1	1	4	4	5.00
973333	1 or 2	1 or 2	1 or 2	2	4.05
9753-9793	1 or 2	1 or 2	3 or 4	4	5.65
975333-979333	1 or 2	1 or 2	2 or 4	4	5.25

### Noark Doall Without End Plate

Amps.	Fused For	Numbers	Price	Numbers	Price
30A	Plug	913123-911123	\$ 2.95	912333-914333	\$ 3.75
30A	Enclosed	921223	3.30	922333-924333	4.05
60A	Enclosed	921226	8.40	923336	9.90
100A	Enclosed	921231	14.95	924331	15.85

### "TYPE C" "NUBLADE"—Quick Break

#### 230 Volts Fusible

Amps.	Number	Price	Number	Price	Number	Price
30	8223	\$ 3.15	8233	\$ 5.15	8243	\$ 8.65
60	8226	8.15	8236	10.00	8246	12.70
100	8221	12.70	8231	15.40	8241	26.30
200	8222	19.95	8232	26.30	8242	43.55
400	8224	49.00	8234	67.15	8244	86.65

#### 230 Volts Solid Neutral

Amps.	Number	Price	Number	Price
30	8933	\$ 5.20	8943	\$10.00
60	8936	10.00	8946	14.50
100	8931	15.40	8941	22.15
200	8932	26.30	8942	45.40
400	8934	67.15	8944	90.75

#### Non-Fusible

Amps.	Number	Price	Number	Price	Number	Price
30	8723	\$ 3.15	8733	\$ 5.15	8743	\$ 8.15
60	8726	8.15	8736	8.65	8746	13.60
100	8721	12.80	8731	12.25	8741	20.90
200	8722	19.05	8732	22.70	8742	38.10
400	8724	36.30	8734	47.20	8744	63.55

### Quick Break "TYPE C" "NUBLADE" 575 V.-AC

Amps.	Number	Price	Number	Price	Number	Price
30	8433	\$10.90	8443	\$18.15	8453	\$10.90
60	8436	13.60	8446	19.95	8456	18.15
100	8431	21.80	8441	36.30	8451	27.25
200	8432	38.10	8442	51.75	8452	42.65

### ACCESSORIES FOR NOARK SWITCHES

Single Piece End Wall for 30 Amp. Switches.	For 60 & 100 Amp.
Shutter for 30	15
Universal End Wall No. 909103	40
Blanking Side No. 908103-908203	15
Trough—3 & 4" 5" 4" 6" 5" 7" 6" 8" 6" 5" 9" 8" 7" 6" 5" 4" 3" 2" 1"	30
Cabinet Fuse Block No. 902413	1.25

### POLYPHASE

#### Meter Service and Entrance Switches

125-250 Volts				Without End Walls			
Main Entrance				Meter Service			
"ACCO" QUAD BREAK				"ACCO" QUAD BREAK			
"SECO" QUAD BREAK				"SECO" QUAD BREAK			
"DOALL"—3 WIRE Accessible Fuses				Accessible Fuses			
Amps.	Number	Price		Number	Price	Number	Price
30	851233	\$ 4.65	77033 \$10.40	67033	\$11.05	67533	\$10.95
60	851236	11.60	77036 18.45	67036	20.20	67536	16.70
100	851231	19.05	77031 28.05	67031	30.00	67531	26.30

### SOLID NEUTRAL SWITCHES

#### Noark Fusible—Quick Break

You're Possible - Quick Break							
Amps.	Volts	3 Pole-2 Blades		4 Pole-3 Blades		5 Pole-4 Blades	
		No.	Price	No.	Price	No.	Price
30	125-250	8133	\$ 4.10	8143	\$ 5.15	8153	\$12.70
60	" "	8136	9.10	8146	11.35	8156	19.95
100	" "	8131	14.50	8141	20.45	8151	35.85
200	" "	8132	22.70	8142	31.75	8152	50.82
400	" "	8134	63.55	8144	81.70	8154	111.00

### BULLDOG SWITCHES

#### Toggle Type—Quick Make & Break

Cat. Number	Volts	Poles	Blades	Fuses	Neutral	30 Amp. Switches
92211 & T-82211	125	2	1	1 Plug		\$1.80
90211	125	2	2	2 " "		4.55
90311	115	3	3	3 " "		8.20
92311	125-250	3	2	2 " "	Solid	5.00
91311	125-250	3	3	3 " "	"	7.25
92221	250	2	1	1 Cart.		1.80
90221	250	2	2	2 " "		5.45
90321	230	3	3	3 " "		8.20
91321	250	3	3	3 " "	Solid	7.75
90351	575 A. C.	3	3	3 " "		12.75
81321-81321U	230-460	3	3	3 " "		9.15

### "TYPE C" NON-INTERLOCKING

#### Quick Make & Break

Single Throw	Fusible	Type "C"
Amps.	250 Volts DC—230 Volts AC	575 Volts AC
30 A. Porc. Base..	50221S \$ 3.20	50321S \$ 5.15
30 A. End Plates..	50221P 3.20	50321P 5.15
30 A. Slate Base..	50221 5.40	50321 10.00
60 A. " " " "	50222 8.20	50322 13.60
100 A. " " " "	50223 12.70	50323 21.80
200 A. " " " "	50224 20.00	50324 38.10
400 A. " " " "	50225 49.00	50325 67.15

These prices apply only to the United States

Electrical Contracting, December, 1931

TYPE "C" NON-INTERLOCKING—Continued					
Single Throw		Not Fusible		Type "C"	
Solid Neutral Blades Omitted		3 Pole 2 Blades 2 Pole Holders 230 V.-AC & DC	4 Pole 3 Blades 3 Pole Holders 115-230 V.-AC	5 Pole 4 Blades 4 Pole Holders 115-230 V.-AC	
x 30 Amp. Type C	52311P	\$ 2.50			
30 " "	52321P	3.20	52421 \$ 6.40	52521 \$ 12.75	
60 " "	52322	9.10	52422 11.40	52522 20.00	
100 " "	52323	14.60	52423 20.50	52523 36.00	
200 " "	52324	22.75	52424 31.95	52524 51.00	
400 " "	52325	33.75	52425 48.00	52525 72.00	
x This Switch for 125 Volts Ed. Plug Fusible.					
		2 Pole	3 Pole	4 Pole	
30 A. 2 Pole—250 Volt	53221S	\$ 3.20	53321S \$ 4.00	53421S \$ 5.90	
30-60 A. DC and 230 Volts	53222	8.15	53322 8.65	53422 13.60	
100 A. AC 3 & 4 Pole	53223	10.90	53323 12.25	53423 20.90	
200 A. 230 Volts	53224	19.00	53324 22.70	53424 38.10	
400 A. AC Only	53225	36.30	53325 47.20	53425 63.50	

30 AMP. SERVICE ENTRANCE SWITCHES				
Bulldog—Not Meter Test				
Cat. Number	Volt	Poles	Description	Price
100211S & P	125	2	Fusible—For Plug Fuses	\$1.65
104211S	125	2	—Quick Make & Break	2.75
100221S & P	250	2	—For Cartridge Fuses	2.50
103221S & P	250	2	Not " "	2.50
103311S & P	115	3	A.C. " "	3.00
104311S	115	3	A.C. " " Quick Make & Break	4.35

MAIN SERVICE				
Meter Test Switches				
Combining a Meter Test Switch with Range and Lighting Circuits				
Number	Amps.	Volt	Poles	Price
721204	60	125-250	3 Solid	\$24.10
721206	60	125-250	3	28.50
431101	Meter Mounting Plate and Cabinet Support			
412112	End Plate			

"TYPE A"						
Bulldog Single Throw Quick Make and Break						
		2 Pole	3 Pole	4 Pole		
250 V. DC & 230 V. AC Fusible No.		Price	No.	Price	No.	Price
30 Amp.....	10221	\$10.90	10321	\$13.60	10421	\$16.85
60 Amp.....	10222	13.60	10322	18.15	10422	21.80
100 ".....	10223	20.90	10323	27.25	10423	36.30
200 ".....	10224	36.30	10324	40.85	10424	54.45
400 ".....	10225	81.70	10325	82.50	10425	107.25
575 Volts—AC Fusible						
30 Amp.....	10261	\$16.35	10351	\$19.25	10451	\$24.50
60 ".....	10262	17.25	10352	20.90	10452	26.30
100 ".....	10263	27.25	10353	31.75	10453	41.75
200 ".....	10264	42.65	10354	52.65	10454	63.50
400 ".....	10265	90.75	10355	99.00	10455	128.00
Not Fusible.....	230 V.-AC, D.C.	575 A.C. ArcChok	575 A.C. ArcChok	575 A.C. ArcChok		
30 Amp. 230 Volts only.....	13221	\$ 9.50	13221	\$11.35	13421	\$16.85
60 ".....	13222	11.35	13222	15.90	13452	21.80
100 ".....	13223	18.15	13223	24.05	13453	31.75
200 ".....	13224	25.40	13224	34.50	13454	46.30
400 ".....	13225	54.45	13225	82.50	13455	107.25
Not Fusible.....	600 V.-AC&DC					
30-60 Amp.....	13262	\$12.70				
100 ".....	13263	20.40				
200 ".....	13264	27.65				
400 ".....	13265	66.25				

COMPENSATOR SWITCHES				
Bulldog Quick Make & Break Fusible				
230 Volt AC				
Amps.	3 Pole	4 Pole		
30 A.	30321 \$16.35	30421 \$ 25.40		
60 A.	30322 20.40	30422 26.30		
100 A.	30323 25.15	30423 47.90		
200 A.	30324 46.30	30424 55.35		
400 A.	30325 86.60	30425 118.80		
575 Volts AC Arc Chokers				
Amps.	3 Pole			
30 A.	30351 \$23.10			
60 A.	30352 23.60			
100 A.	30353 37.20			
200 A.	30354 54.90			

MOTOR STARTERS				
Bulldog				
		3 Pole	4 Pole	
30 Amp.—Type A—230 Volts AC	40321	\$16.35	40421 \$22.70	
60 " "	40322	22.70	40422 31.75	
30 " "	40341	22.70	40441 31.75	
60 " "	40342	32.70		

NOTE: For Bulldog Switches not listed deduct 10% from Bulldog Lists.

SMALL ENTRANCE SWITCHES				
Columbia, 30 Amp.				
Description		2 Pole	3 Pole	
Single Fused Single Blade—125 Volt—Plug Fused		320-321	\$1.50	
Double " " " "	125	322	1.25	
" " " " " "	"	323	1.90	
" " " " " "	250	324	2.85	
" " " " " "	250	325	2.50	
Description		3 Pole		
Single Fused Single Blade—125 Volt—Plug Fused		1931-2	\$2.15	
Double " " " " " "	125	3931-2	2.45	
" " " " " "	250	322	4.00	
" " " " " "	250	422	4.40	

ENTRANCE SWITCHES				
Range and Lighting				
Cat. No.	Amps.	Branches	3 Pole 125-250 Volt	Price
3551	60	1-30A-1-60A, 250V. N. E. C. Fused & 2-30A. Plug Fused		\$34.60
3552	60	1-30A-1-60A, 250 V. " " " " " "		35.40
3553	60	1-30A-1-60A, 250 V. " " " " " "		38.60

BRANCH CIRCUIT ENTRANCE SWITCHES				
Columbia				
30 Amp. Series	2 Pole Circuit	3 Pole Circuit	4 Pole Circuit	5 Pole Circuit
2401 to 2406	\$3.90	\$4.90	\$5.20	\$5.85
3401 to 3406	4.90	6.20	6.50	7.15
3501 to 3506	4.75	5.85	6.20	6.90
Series 30—Quick Break—250 Volts for Meter Trims				
For Cartridge Fuses				
2 Pole	3022 \$5.55	3025 \$ 8.75	3028 \$12.50	3031 \$18.20
3 Pole	3023 7.50	3026 10.00	3029 16.15	3032 24.05

INDUSTRIAL SWITCHES				
Columbia				
Series 70 Type C Fusible				
Amps	2 Pole	3 Pole		
250 Volts Fusible	30A C7001 \$ 9.30	C7002 \$11.30		
60A C7004 12.00	C7005 15.50			
100A C7007 18.85	C7008 23.65			
200A C7010 27.95	C7011 34.65			
Series 70 Type A Fusible				
Amps	2 Pole	3 Pole		
250 Volts Fusible	30A A7001 10.30	A7002 \$12.85		
60A A7004 13.10	A7005 17.30			
100A A7007 21.45	A7008 27.50			
200A A7010 30.50	A7011 38.35			
Series 71-500 Volts Fusible				
Amps	2 Pole	3 Pole		
500 Volts Quick Make & Break	30A 7101 \$15.00	7102 \$15.50		
60A 7104 14.00	7105 16.00			
100A 7107 23.50	7108 26.65			
200A 7110 37.70	7111 42.25			
Series 72-500 Volts Unfused				
Amps	2 Pole	3 Pole		
500 Volts Quick Make & Break	30A 7301 \$10.80	7302 \$12.70		
60A 7304 10.80	7305 13.25			
100A 7307 17.15	7308 19.20			
200A 7310 23.65	7311 28.45			
Series 74-600 Volts Unfused				
Amps	2 Pole	3 Pole		
600 Volts Quick Make & Break	30A 7401 \$11.70	7402 \$14.35		
60A 7404 12.45	7405 14.95			
100A 7407 18.90	7408 21.45			
200A 7410 25.15	7411 29.25			
Series 20-250 Volts Fusible				
Amps	2 Pole	3 Pole		
Quick Break Only	30A 2022 \$ 5.10	2023 \$ 6.85		
60A 2025 6.85	2026 7.90			
100A 2028 10.85	2029 13.35			
200A 2031 19.10	2032 23.85			
Series 23-250-500 Volts Unfused				
Amps	2 Pole	3 Pole		
Quick Break Only	30A 2322 \$ 4.75	2323 \$ 6.35		
60A 2325 6.35	2326 7.55			
100A 2328 11.35	2329 13.55			
200A 2331 19.10	2332 25.40			

Wadsworth Switches				
MAIN ENTRANCE SWITCHES				
Single Phase and D. C.	Amps.	Volts	Poles	Blades
1450-1250	30	125	2	1 Plug
1402-1202	30	125	2	2 " "
1403-1203	30	125-250	3	2 " "
2250	30	125	2	1 NEC
2202	30	250	2	2 " "
2203	30	125-250	3	2 " "
1500	60	125	2	1 " "
1802	60	125 or 250	2	2 " "
1803	60	125-250	3	2 " "
1900	100	125	2	1 " "
1902	100	125 or 250	2	2 " "
1903	100	125-250	3	2 " "
4603	200	125-250	3	2 " "
4903	400	125-250	3	2 " "

MAIN ENTRANCE SWITCHES				
POLYPHASE				
Single Phase and D. C.	Amps.	Volts	Poles	Blades
2230	30	250	3	3 NEC
1830	60	250	3	3 " "
1930	100	250	3	3 " "
4630	200	250	3	3 " "

These prices apply only to the United States





## S-SUNDRIES

## MACHINE SCREWS—Round or Flat Head

Size	Price per Dozen		Size	Price per Dozen	
	Iron	Brass		Iron	Brass
$\frac{1}{8}$ x $\frac{1}{4}$ .....	.05	.08	10/24 x $\frac{1}{4}$ .....	.06	.20
$\frac{1}{8}$ x $\frac{1}{2}$ .....	.05	.09	10/24 x $\frac{1}{2}$ .....	.06	.22
$\frac{1}{8}$ x 1.....	.05	.10	10/24 x 1.....	.06	.28
$\frac{1}{8}$ x 1 1/2.....	.05	.12	10/24 x 1 1/2.....	.07	.29
$\frac{1}{4}$ x $\frac{1}{4}$ .....	.05	.12	$\frac{1}{4}$ x 20-1.....	.08	.36
$\frac{1}{4}$ x $\frac{1}{2}$ .....	.05	.12	$\frac{1}{4}$ x 20-1 1/2.....	.09	.40
$\frac{1}{4}$ x 1.....	.05	.13	$\frac{1}{4}$ x 20-1 3/4.....	.10	.45
$\frac{1}{4}$ x 1 1/2.....	.05	.15	$\frac{1}{4}$ x 20-1 3/2.....	.12	.50

NOTE—For Machine Screws with Fillister Head add 25% to above prices.

## LAG SCREWS

## Square Heads or Coach Screws

Length	Price Each		Length	Price Each	
	2"	2 1/4"		4"	5"
$\frac{1}{2}$ Black.....	.03	.04	$\frac{1}{2}$ Black.....	.04	.05
$\frac{3}{4}$ Black.....	.03	.04	$\frac{3}{4}$ Black.....	.05	.06
1 Black.....	.04	.05	1 Black.....	.06	.07
$\frac{1}{2}$ Galv.....	.03	.04	$\frac{1}{2}$ Galv.....	.04	.05
$\frac{3}{4}$ Galv.....	.04	.05	$\frac{3}{4}$ Galv.....	.05	.06
1 Galv.....	.05	.06	1 Galv.....	.06	.07

## STRAPS—CLIPS OR CLAMPS

## For Pipe

Without Screws	Price Each		Without Screws	Price Each	
	1/4"	1/2"		1"	1 1/2"
Galvanized Straps, 2 Hole.....	.01	.01	Galvanized Straps, 2 Hole.....	.01	.02
(Per Pound \$.20) No. Straps per Lb.....	45	40	(Per Pound \$.20) No. Straps per Lb.....	20	13
Light Steel Straps, 1 Hole.....	.04	.05	Light Steel Straps, 1 Hole.....	.06	.08
Mall. Iron Clamps, 1 Hole.....	.04	.05	Mall. Iron Clamps, 1 Hole.....	.06	.08
P & S Conduit Clamps with Bolts.....	.10	.14	P & S Conduit Clamps with Bolts.....	.18	.20
Series 1400.....			Series 1400.....		

## SOLDER

Per Pound.....	40-60 Bar or Wire	50-60 Bar or Wire	Resin or Acid Core	Ribbon 30-70	Allen Alumi-Flux
	\$.05	\$.70	\$.85	\$.75	\$.20
Per Ounce.....	.05	.05	.08	.07	.15

## SOLDER PASTE

Make	2 oz. Cans	2 oz. Tubes	4 oz. Cans	Half Pound Cans	One Pound Cans
	\$.25	\$.40	\$.50	\$.70	\$.85
Allen.....	.25	.40	.50	.70	.85
Burnley.....	.25	.40	.50	.70	.85
Crescent.....	.25	.40	.50	.70	.85
G. E.....	.25	.40	.50	.70	.85
Highland.....	.25	.40	.50	.70	.85
Nokorode.....	.25	.40	.50	.70	.85
Star.....	.25	.40	.50	.70	.85

## SOLDERING SALTS

Burnley.....	In cans each	1/4 Lb.	1 Lb.
	\$.40	\$.75	1.00
Yager.....	In cans each	.85	1.00
McGill Crescent.....	In cans each	.75	1.00
Nokorode.....	In cans each	.75	1.00
Allen.....	In cans each	.75	1.00

## SOLDER STICKS

Burnley.....	Price
	\$.25
Samson.....	.30
Allen.....	.40
Crescent.....	.25
GE.....	.25
Star.....	.25

## FIXTURE STUDS

Four Prong Fixture Studs Less Bolts.....	1/4	3/4
	\$.10	\$.15
Bolts Extra.....	.01	.01
No Bolt Fixture Studs.....	.10	.15

## STAPLES

Staples Insulated Nails Per Dozen.....	\$.05	Per Box.....	\$.40
		of 100	.40
Leather Nail Heads Per Dozen.....	.05		.40
Milonite Insulated Nails Per Dozen.....	.05		.40

## TAPE

Adhere.....	8-Ounce Roll	4-Ounce Roll	2-Ounce Roll	1-Ounce Roll	Per Foot
	\$.25	\$.15	\$.10	\$.05	\$.01
Amazon.....	.35	.20	.10	.05	.01
Buildog.....	.40	.20	.10	.05	.01

Clifton.....	.35	.20	.10	.05	.01
Dutch Brand.....	.35	.20	.10	.05	.01
G. E. 361.....	.80	.20	.10	.05	.01
Grimshaw.....	1.00	.30	.25	.15	.03
Highest Firestone.....	.30	.15	.10	.05	.01
Holdfast.....	.25	.15	.10	.05	.01
Holdite U. S.....	.30	.15	.10	.05	.01
Johns Manville Armature.....	.90	.45	.25	.15	.02
" " Jomasco.....	.55	.30	.15	.10	.02
" " White.....	.70	.35	.20	.10	.02
" " #3 Now #5.....	.25	.15	.10	.05	.01
" " #5 " #40.....	.30	.15	.10	.05	.01
Manson.....	.60	.30	.15	.10	.02
O. K.....	.30	.15	.10	.05	.01
P & B.....	.35	.20	.10	.05	.01
Security.....	.25	.15	.10	.05	.01
Slipknot.....	.30	.15	.10	.05	.01
Two Plex.....	.65	.35	.20	.10	.04
Vim Gray.....	.60	.30	.15	.10	.02

## RUBBER

Akron Firestone.....	\$0.30	\$0.15	\$0.10	\$0.05	\$0.03
Amazon.....	.50	.25	.15	.10	.04
Dutch Brand.....	.30	.15	.10	.05	.03
G. E. 362.....	.30	.15	.10	.05	.03
Imperial.....	.30	.15	.10	.05	.03
Okonite.....	.75	.40	.20	.10	.04
Paragon.....	.85	.45	.25	.15	.04
P. R. Splicing.....	.30	.15	.10	.05	.03
Relio U. S.....	.25	.15	.10	.05	.03
Security.....	.30	.15	.10	.05	.03
Two Plex.....	.65	.35	.20	.10	.04
U. S.....	.25	.15	.10	.05	.03
USCO.....	.50	.25	.15	.10	.04

## TELEPHONES

## COUCH TELEPHONES

## Vestibule Type

No. 74 Armored Cord Receiver Type.....	\$25.00
No. 74A Swing Arm Receiver Type.....	37.30
No. 74C Cordless Loud Speaker Type.....	30.75
Above prices are for telephones complete but do not include for any call buttons.	
Add for buttons—Janitor Calling Buttons if fitted.....	\$.95
Add for Each Suite Calling Button.....	.95

## SUITE TELEPHONES

Series 2800 to 2849 or 1000 to 40.....	Page 22 Bulletin No. 80 S. H. Couch Co.
Number of Buttons.....	0 1 2 3
Price Ea. Surface or Flush.....	\$11.40 \$11.40 \$12.45 \$13.60

## TELEPHONE CABLES

Number of Conductors	Braided Type "B" Number	Price per Foot	Lead Covered Type "L" Number	Price per Foot
12	B-12	.15	L-12	.21
16	B-16	.18	L-16	.27
21	B-21	.22	L-21	.29
25	B-25	.24	L-25	.32
31	B-31	.27	L-31	.35
37	B-37	.30	L-37	.44

## EDWARDS TELEPHONES

## Vestibule Type

No. 321 and 397 Armored Cord Receiver Type.....	\$25.00
No. 322 and 396 Cordless Loud Speaker.....	30.75
Above prices are for telephones complete but do not include any call buttons.	
Add for each Call Button.....	\$.95
Mail Box.....	3.25

## Apartment Telephones

No. 3322 and 3352 Surface Wall Type Watch Case Receiver.....	\$12.50
No. 3332 and 3362 " " " Long Hand ".....	16.75
No. 3342 and 3372 Flush " " " Watch Case ".....	12.50
Above prices are for telephones complete with two push buttons—Add \$1.10 for 3 Buttons.	

## STANLEY &amp; PATTERSON TELEPHONES

## Vestibule Type

No. 9-PE Armored Cord Receiver Type.....	\$25.00
No. 8-PVE Cordless Loud Speaker.....	30.75
Above prices are for telephones complete but do not include any buttons.	
Add for each Call Button.....	.95
No. 12603—3 Gang Mail Box, for use with Vestibule Telephones.....	12.50
Add for each additional Gang.....	4.20

## Apartment Telephones

No. 2524-PE Surface Wall Type with Watch Case Receiver.....	\$12.50
No. 1172-PE " " " Long ".....	16.75
No. 2530-PE Flush " " " Watch Case ".....	12.50
Above prices are for Telephones complete with two push buttons.	

## TIME SWITCHES

## GENERAL ELECTRIC TIME SWITCHES

## TYPE T-8C—Sgle. Pole

## 15 Amp. Indoor Service

Type	Cat No.	115 V. Price	230 V. Price
T-8C1.....	34x979 to 984.....	\$22.00	\$23.00
T-8C3.....	34x985 to 990.....	23.00	24.00
T-8C4.....	34x991 to 996.....	22.00	23.00

## TYPE T-9—Dble. Pole

## 30 Amp. In or Outdoor Service

60 and 50 Cycle.....	10x637-40.....	40.00	41.00
40 and 25 ".....	10x641-44.....	40.00	41.00
Holiday Cutout Extra.....		4.00	4.00

These prices apply only to the United States

### TYPE T-13 ELECTRICALLY OPERATED

## TWO-CIRCUIT SWITCH

## HARTFORD TIME SWITCHES

## HOROLECTRIC TIME SWITCHES

## PARAGON

## RELIANCE & RACINE SWITCHES

## SANGAMO TIME SWITCHES

## TRIPLEX

*These prices apply only to the United States*

## TORK

## MARK-TIME SWITCH

## TRANSFORMERS

## BELL & TOY TRANSFORMERS

NOTE: For 220 Volt Transformers add 20% to above prices.



## WIRES

## NEW CODE RUBBER COVERED WIRES

Special Price on No. 14 S.B. Wire

In less than Coil Lots	Per Foot	No. 14	No. 16	No. 18
In Coil Lots	\$.01 1/2			
Other Sizes				
Fixture Wire Light	\$.01 1/2	\$.01	\$.01 1/2	\$.01 1/2
" Heavy	\$.01 1/2	\$.01	\$.01 1/2	\$.01 1/2
Solid Single Braid	\$.01	\$.01	\$.01 1/2	\$.01 1/2
" Double	\$.01	\$.01	\$.01 1/2	\$.01 1/2
Stranded Sple. Braid	\$.01	\$.01 1/2	\$.01 1/2	\$.01 1/2
" Dble.	\$.01	\$.01 1/2	\$.01 1/2	\$.01 1/2
Duplex Single Braid	\$.02 1/2	\$.02 1/2	\$.02 1/2	\$.02 1/2
" Double	\$.03 1/2	\$.03 1/2	\$.03 1/2	\$.03 1/2
Other Sizes				
Fixture Wire Light	\$.01	\$.01 1/2	\$.02 1/2	\$.03 1/2
" Heavy	\$.01 1/2	\$.02	\$.02 1/2	\$.04
Solid Single Braid	\$.01	\$.01 1/2	\$.02 1/2	\$.03 1/2
" Double	\$.01 1/2	\$.02	\$.02 1/2	\$.04
Stranded Sple. Braid	\$.01 1/2	\$.02	\$.02 1/2	\$.04
" Dble.	\$.01 1/2	\$.02 1/2	\$.03	\$.05
Duplex Single Braid	\$.03	\$.04	\$.05	\$.08
" Double	\$.04	\$.05	\$.06	\$.09

## LARGER SIZES DOUBLE BRAID STRANDED

Size	Price Per Foot	Size	Price Per Foot
No. 8 D. B.	\$.03	No. 0	\$.14
No. 6 D. B.	\$.05	No. 00	\$.16
No. 4 D. B.	\$.06	No. 000	\$.20
No. 3 D. B.	\$.07	No. 0000	\$.24
No. 2 D. B.	\$.08	250,000	\$.29
No. 1 D. B.	\$.12		

## CIRCULAR MILL CABLE

Size	Price Per Foot	Size	Price Per Foot
300,000 C. M.	\$.33	700,000 C. M.	\$.77
350,000 C. M.	\$.38	750,000 C. M.	\$.82
400,000 C. M.	\$.42	800,000 C. M.	\$.92
450,000 C. M.	\$.47	900,000 C. M.	1.00
500,000 C. M.	\$.52	1,000,000 C. M.	1.00
600,000 C. M.	\$.64		

Additions to Code Wire for 25% (Intermediate Grade) and 30% Wire.

Sizes	For Intermediate or 25% Wire	For 30% Wire
From No. 14 to No. 10	8%	20%
From No. 8 to 4	6%	10%
From 3 to 4/0	4%	7%
From 250,000 to 1,000,000 CM.	2%	5%

## WEATHERPROOF WIRE

## Triple Braid

	No. 18	No. 16	No. 14	No. 12	No. 10	No. 8	No. 6
Per Pound Solid	\$.55	\$.50	\$.45	\$.41	\$.37	\$.34	\$.32
" " Stranded	\$.01	\$.01 1/2	\$.02	\$.02 1/2	\$.03	\$.04	\$.05
Per Foot Solid	\$.01 1/2	\$.01 1/2	\$.02 1/2	\$.03	\$.03 1/2	\$.04	\$.05
" " Stranded	\$.01 1/2	\$.01 1/2	\$.02 1/2	\$.03	\$.03 1/2	\$.04	\$.05
Number Feet Per Pound	70	80	40	30	20	13	

EXTRAS—For slow burning W. P. Wire—Per Pound Extra. . . . . \$ .02  
 For Twisted Pair W. P. Wire—Per Pound Extra. . . . . \$ .01  
 For Double Braid W. P. Wire—Per Pound Extra. . . . . \$ .01  
 For Medium Hard Draw—Per Pound Extra. . . . . \$ .00 1/2  
 For Armored Cables See Page PL-9.

## ANNUNCIATOR—TELEPHONE WIRE, ETC.

Description	No. 18	No. 16	No. 14	No. 12
Single	Per Pound. . . . . \$ .70	\$.60	\$.50	
Twisted or Duplex	Per Foot. . . . . \$ .00 1/2	\$.00 1/2	\$.01	
Per Foot. . . . .	\$.65	\$.64	\$.62	
Per Foot. . . . .	\$.01	\$.01 1/2	\$.02	

Approximate feet per pound Single Cond. Annunciator Wire 158 104 68

Description	No. 18	No. 16	No. 14	No. 12
Single	Per Pound. . . . . \$ .70	\$.65	\$.64	
Twisted or Duplex	Per Foot. . . . . \$ .01	\$.01 1/2	\$.02	
Per Foot. . . . .	\$.76	\$.71	\$.68	
Per Foot. . . . .	\$.02	\$.03	\$.04	

"Deltabeston" or similar

Single Stranded Black/White Per Foot	\$.02 1/2	\$.03	\$.03 1/2	\$.04
Single Stranded Colored Per Foot	\$.03	\$.03 1/2	\$.04 1/2	\$.05 1/2
Single Glazed Cotton Per Foot	\$.03	\$.03 1/2	\$.04 1/2	\$.05 1/2
Single Artificial Silk Per Foot	\$.04	\$.04	\$.05	
Duplex Glazed Cotton Per Foot	\$.06	\$.07	\$.08	
Duplex Artificial Silk Per Foot	\$.07	\$.08	\$.09	
Twisted Pair Glazed Cotton Per Foot	\$.07	\$.08	\$.09	
Twisted Pair Artificial Silk Per Foot	\$.07	\$.08	\$.09	

Thermostat Wire No. 18—3 Conductor Solid—Per Ft. . . . . \$ .02

Asbestos Range Wire

Description	No. 18	No. 16	No. 14	No. 12	No. 10	No. 8
Wire Single Solid—Per Foot	\$.07	\$.08	\$.09	\$.10	\$.12	\$.14

These prices apply only to the United States

## TELEPHONE WIRES

Covered Inside & Outside Size Ins.	Description	Price Per Ft.
#10 3/32" Inside 2 Cond Twisted Pr.		\$.03
19 3/32" " 3 " " " "		\$.04
22 5/64" " 2 " " " " "	Flameproof	\$.04
18 7/64" Outside 2 " " " " "	Sat. Brd. Bridle W.	\$.03
16 4/32" " 2 " " " " "	" " " " "	\$.03
14 5/32" " 2 " " " " "	" " " " "	\$.05
14 5/32" " 2 " " " " "	Copperweld-Drop W.	\$.05

For price of single conductor use one-half of 2 Cond. price.

## GALVANIZED TELEPHONE WIRE

Size BWG	No. 4	No. 6	No. 8	No. 10	No. 12	No. 14
EBB Extra Best	Per Pound. . . . . \$ .12	\$.12	\$.12	\$.12	\$.13	\$.14
B. B. Best Best	" " " " " " " "	\$.11	\$.11	\$.11	\$.12	\$.13
Steel	" " " " " " " "	\$.10	\$.10	\$.10	\$.10	\$.11
Weight Per 1000 Feet	153	112	74	49	32	19
Weight Per Mile	811	590	390	268	170	99

## WIRE, MAGNET

## Price Per Pound

Size	Single Cotton	Double Cotton	Single Silk	Double Silk	Plain Enamel-ed Cotton	Enamel-ed Single Cotton	Enamel-ed Double Cotton
8	\$.31	\$.33			\$.30	\$.34	\$.36
10	\$.32	\$.35			\$.31	\$.35	\$.38
12	\$.33	\$.36			\$.32	\$.37	\$.40
14	\$.35	\$.40			\$.33	\$.39	\$.43
16	\$.37	\$.43	\$.62	\$.77	\$.35	\$.41	\$.47
18	\$.41	\$.50	\$.68	\$.87	\$.37	\$.47	\$.55
20	\$.48	\$.60	\$.76	1.00	\$.40	\$.54	\$.64
22	\$.54	\$.67	\$.82	1.10	\$.42	\$.58	\$.72
24	\$.57	\$.76	\$.93	1.16	\$.45	\$.67	\$.87
26	\$.61	\$.93	1.06	1.30	\$.48	\$.80	1.04
28	\$.71	1.12	1.26	1.60	\$.51	\$.96	1.21
30	\$.88	1.21	1.35	2.27	\$.64	1.16	1.47
32	1.04	1.35	1.78	3.10	\$.61	1.40	1.96
34	1.30	2.12	2.30	4.75	\$.71	1.80	2.97
36	1.95	2.88	3.30	7.18	\$.82	2.45	3.55
38	4.42	6.85	8.10	10.15	\$.88	4.65	
40					1.36		

NOTE: For odd sizes use half the increase of next larger size.  
 For 1/4 lb. lots use one third of above prices.  
 For one ounce lots use one tenth of above prices.

## Price Per 100 Feet Plain Enamel-ed Cotton

Size	Single Cotton	Double Cotton	Single Silk	Double Silk	Enamel-ed Cotton	Enamel-ed Single Cotton	Enamel-ed Double Cotton
8	\$1.80	\$2.00			\$2.25	\$2.50	\$2.75
10	1.20	1.30			1.50	1.75	2.00
12	.75	.80			1.00	1.25	1.50
14	.60	.70			.75	1.00	1.25
16	.45	.55	\$0.70	\$0.75	.55	.65	.75
18	.30	.40	.40	.45	.30	.35	.50
20	.25	.35	.35	.40	.25	.30	.45
22	.15	.25	.20	.30	.20	.25	.35
24	.10	.20	.15	.20	.10	.15	.25
26	.10	.20	.15	.20	.09	.13	.25
28	.08	.12	.10	.15	.07	.10	.18
30	.08	.12	.10	.15	.07	.10	.18
32	.06	.10	.08	.12	.05	.08	.14
34	.06	.10	.08	.12	.05	.08	.14
36	.05	.08	.06	.10	.04	.06	.08
38	.05	.08	.06	.10	.04	.06	.08
40					.04	.06	.08

Note: Prices per 100 feet are higher than per pound rate to cover cost of measuring and should be used only for small lot sales.

## LEAD &amp; RUBBER COVERED WIRE AND CABLE

Size	Single Conductor	Duplex Two Conductor	Three (3) Conductor
No. 14	Price Per Foot \$ .03	\$.04	\$.05
No. 12	" " " " " " " "	\$.05	\$.06
No. 10	" " " " " " " "	\$.07	\$.10
No. 8	" " " " " " " "	\$.08	\$.12
No. 6	" " " " " " " "	\$.10	\$.14
No. 4	" " " " " " " "	\$.15	\$.20
No. 3	" " " " " " " "	\$.24	\$.32
No. 2	" " " " " " " "	\$.32	\$.45
No. 1	" " " " " " " "	\$.47	\$.60
No. 1/0	" " " " " " " "	\$.66	\$.80
No. 2/0	" " " " " " " "	\$.85	1.10
No. 3/0	" " " " " " " "	1.10	1.35
No. 4/0	" " " " " " " "	1.35	1.65
250,000 C. M. Cable		1.48	
300,000 C. M. " "		1.64	
350,000 C. M. " "		1.80	
400,000 C. M. " "		1.96	
500,000 C. M. " "		2.40	
600,000 C. M. " "		2.80	
700,000 C. M. Cable		3.10	
750,000 C. M. " "		3.40	
800,000 C. M. " "		3.70	
900,000 C. M. " "		4.00	
1,000,000 C. M. " "		4.30	

NOTE: Above prices are based on following quantities:  
 No. 14 to No. 8 Less than 100 ft. No. 6 and larger less than 50 ft.

## PARKWAY CABLES

Size	Steel Taped 2 Cond.	3 Cond.	Non-Metallic 2 Cond.	3 Cond.
No. 14 per ft.	\$.33	\$.51	\$.22	\$.28
No. 12 " " "	\$.35	\$.54	\$.24	\$.32
No. 10 " " "	\$.38	\$.60	\$.27	\$.37
No. 8 " " "	\$.43	\$.68	\$.31	\$.44
No. 6 " " "	\$.55	\$.90	\$.37	\$.55
No. 4 " " "	\$.68	1.12	\$.45	\$.65
No. 2 " " "	\$.92	1.50	\$.66	1.25
No. 1 " " "	1.25	1.90	\$.80	1.55
No. 0 " " "		2.10	\$.93	1.80

NOTE: Prices on Parkway Cables are based on Trade costs in quantities of less than 100 Feet. Larger quantities take lower prices. Consult your jobber.

# A SWEETER TUNE will bring them OUT!



**C**ONTRACTING jobs have taken to their holes and are wary about being caught. Yet some contractors are making money. Why? Because they are "playing the right tune" to the prospect—the sweetest tune of all... bigger sales inducements, greater advantages, better values. Maybe you can profitably change your tune by tying up with a line that offers such inducements—the Cutler-Hammer Line of Wiring Devices and Safety Switches.

New ideas and improvements constantly appear in this line—improve-

ments the market is waiting for. Take the new outlet box toggle switches... the only switches that offer the advantages of full flush mounting. Increased life and satisfaction have been built into these switches too... sales features that *mean* something to your prospect.

The same progressiveness and intelligence is displayed throughout the entire line... fitting it to the needs of the times, the customer and you. Cash in on the momentum, the friendship and respect this line has built for itself.

Let Cutler-Hammer's aggressive, vigorous merchandising and advertising policy work for you. Hook up with the line recognized to be of the highest quality made. The nearest C-H Distributor will give you all particulars. **CUTLER-HAMMER, Inc., Pioneer Manufacturers of Electrical Apparatus, 1258 St. Paul Avenue, Milwaukee, Wisconsin.**



**C-H 9115—The Small Starter With the Big Performance**

The New C-H 9115 Manual Starter for small motors offers almost everything the big C-H Starters offer—except automatic push-button control. Has the famous standard C-H Thermal overload relay... giving certain protection to motor and top speed to production. Relay resets at a push of the handle... nothing to take out or replace. Twin-break contacts, extra rugged construction. Simplest design, no delicate parts.



**C-H Outlet Box Toggle Switch (Bul. 7221)**

**NEW** to the entire trade  
All Advantages of  
full flush Mounting

In the new Line of Outlet Box Toggle Switches, C-H has gone a step further and placed the entire switch beneath the outlet box cover, giving full advantages of entire flush mounting. Yet the switch base is shallow enough to fit the ordinary box. Toggle lever shortened too—it extends just enough for easy operation. You don't have to take this switch apart to wire—the terminals are exposed. The base is shatter-proof Thermopax, providing longer life, eliminating breakage in transit. Choice of black enamel or cadmium plated cover.

# CUTLER HAMMER

*Wiring Devices and Safety Switches for Every Service*

(A-399C)

(Continued from page 25)

business" statistics of hundreds of electragists.

#### LIABILITY INSURANCE

J. A. FOWLER, *Chairman*

Committee represents the A. E. I. with the Utilities Indemnity Exchange of St. Louis, an inter-insurance organization, in obtaining for electragist members liability and compensation insurance at cost. During the past 16 years, many thousands of dollars have been saved to A. E. I. members using this insurance feature.

#### PUBLICATION

L. E. MAYER, *Chairman*

Committee serves as editorial advisors in relationship to the official Association journal, ELECTRICAL CONTRACTING. This monthly publication is purchased and sent to every A. E. I. member as a part of his membership service.

#### U. S. CHAMBER OF COMMERCE

L. K. COMSTOCK, *Chairman*

Chairman of this committee serves as National Councillor in the Chamber of Commerce of the United States.

#### INTERNATIONAL RELATIONS

R. A. L. GRAY, *Chairman*

Committee brings to the A. E. I. the viewpoints and experience of the Canadian membership. Adapts to Canadian trade conditions, to Canadian Code developments and applications, and to inter-relations with Canadian manufacturers, wholesalers and central stations, the principles and policies developed by A. E. I.

#### MEMBERSHIP

F. T. LANGFORD, *Chairman*

Committee passes upon the requirements and qualifications for membership. Passes upon applications for charters for chapters and the territorial jurisdiction of chapters, subject to review of the Executive Committee. Investigates and recommends proper action to Executive Committee in cases of misconduct of members or breach of provisions of charters. Stimulates the development of the Chapter plan, resulting in organizing, since April, 1929, of 100 Electragist chapters covering 237 cities and towns.

#### MOTOR DISTRIBUTION POLICIES

F. O. SIEVERS, *Chairman*

Committee serves as contact between International Executive Committee and the chairman of National Motor Section. Analyzes motor distribution problems and recommends action by Motor Section to improve conditions.

## Take Two Spoons For Example!



... Could you tell which was **STERLING** by mere observation?

**N**O, of course not. Yet many users of Friction Tape believe one brand of tape is as good as another simply because rolls of tape generally look alike. Ultimately they find out that there is a big difference... especially when **DUTCH BRAND** is the basis for comparison.

Would you too like to find out for yourself why **DUTCH BRAND** Friction Tape is known as "An Extra Service Product"? Just clip out this ad, pin to your letterhead and mail to us and a full size roll will be sent you post paid. If the tape itself won't make you a **DUTCH BRAND** user, no amount of advertising ever will.

**DUTCH BRAND** is the four times impregnated tape that big industries use. A supply is always easily secured from your jobber.

**VAN CLEEF BROS.** Established 1910

Manufacturers Friction and Rubber Tape  
Woodlawn Avenue, 77th to 78th Streets, Chicago, U. S. A.



**DUTCH BRAND**  
Rubber Insulating Tape  
Fuses instantly without heat. Molds into one solid piece, replacing the original insulation. Resists over 22,000 volts.



**DUTCH BRAND**  
FRICTION TAPE  
INSULATES PERFECTLY  
WON'T RAVEL



**DUTCH BRAND**  
Soldering Paste  
A scientific mixture. Cleans as it works. Holds solder fast. Less paste required per job.

## DUTCH BRAND FRICTION TAPE



# Contracting News

*Information of Interest to Electrical Contractors consisting of items of news, short articles, practical ideas, etc. Our readers are invited to contribute to this department*

## To Reinspect Industrials

During the coming year the Fort Worth Chapter of Electragists plan to reinspect all industrials in the territory covered by its members. Other plans in preparation are to try to secure a revision of the local city ordinance, and arrive at a mutual understanding between central stations and electragists as well as with wholesale distributors and jobbers.

New officers elected for 1932 are: Otto Miller, Miller Bros. Electric Co., president; Frank Ewell, Ewell Electric Co., vice-president, and Herman Brown, Republic Electric Co., secretary-treasurer. The board of directors consists of Eugene Ashe, Ashe Electric Co., John Goolsby, Goolsby Electric Co., and Hubert Dickey, Dickey Electric Co.

## Campaign to Relight Billboards

The Jefferson County Chapter of Electragists, Birmingham, Ala., is planning a campaign to illuminate and relight all billboards and signs now in use throughout the territory.

Another plan which is in its formative stage is a Christmas tree and store window lighting campaign, which will be worked out in cooperation with the Electric League and either one of the local newspapers or Chamber of Commerce.

A committee was appointed to develop new work and association activities, composed of R. C. Wiggins, president of Knight Electric Co., and

C. S. Dyer of Ball & Dyer Electric Co.

The officers elected to serve for the next six months are A. P. Bagby, president; J. S. O'Keefe, vice-president, and D. B. Clayton, secretary-treasurer.

## Mid-Winter League Conference in Philadelphia

The annual mid-winter conference of electrical leagues will be held this year in the new quarters of the Electrical Association of Philadelphia, January 25, 26 and 27.

## Pyramiding Illegal in Wisconsin

Under a new Wisconsin law all money paid by an owner to a contractor or sub-contractor must be used to pay labor and material costs on that particular building or else the contractor may be punished for embezzlement. The enforcement of this law is expected to greatly improve competitive building conditions, and prevent pyramiding.

Some interesting comments on this law have been made by James T. Drought, general counsel for the Construction Industry Credit Bureau, Inc., and other Wisconsin building interests. They are as follows:

"This law is an enlargement of the former law extending the provisions to include sub-contractors as well as principal contractors within its purview and is important to the building industry generally because it establishes that all moneys received by a principal con-

tractor or a sub-contractor on building work, must first be used to pay up labor and material bills; if not so used, the offender shall be punished for embezzlement upon complaint of any party otherwise entitled to a claim for mechanics lien on that job, who may be injured by the misappropriation. This will protect owners, building and loan associations and sureties on a contractor's bond.

"This makes it a punishable offense to use funds for one job for financing another job or to divert the funds to the contractor's personal use until bills have first been taken care of.

"Unfortunately, the law is no guarantee to the owner, material man or building mechanic against embezzlement any more than laws can guarantee against bank robberies. However, if given sufficient publicity, this law should be an effective deterrent for those whose loose business and accounting methods do not always distinctly mark the difference between personal funds and construction funds.

"Under any circumstances, the best guarantee for faithful performance of a contract and proper accounting for moneys is to employ first class responsible architects, engineers and contractors."

## Request Uniform Radio Interference Ordinance

At the annual convention of the International Association of Municipal Electricians held at Jacksonville, Fla., October 27 to 30, W. H. Greenlaw, city electrician of Beverly, Mass. chairman of the radio interference committee, recommended that a committee of five be appointed by the



**PRESIDENT OF FORT WAYNE ASSOCIATION:** Verne S. Pifer of Pifer Electric Co., Fort Wayne, Ind., is serving his second term as president of the Fort Wayne Electric Association. The association holds meetings every week and Mr. Pifer is right on the job. He believes in attending meetings and keeps a systematic record of the attendance record of the individual members. A handy chart of his own design shows at the end of a given period the tabulated record of the average attendance of all members.



**REPAIR SPECIALIST FOR 18 YEARS:** E. R. Crum (right), Crum Electric Co., Memphis, Tennessee, started in business in 1913 and selected repairs as a good specialty for turnover and building up a list of regular customers. He should know how electrical trouble is corrected, having been a power company electrician and a captain in the Signal Corps during the World War. He is also an electrical engineer. With him in the picture are E. R. Crum, Jr. (left) and R. W. Pratt.

president to draw up a uniform radio interference ordinance. This committee will cooperate with State and Federal officials as well as with joint committees on radio interference composed of members of N.E.L.A., N.E.M.A., and radio manufacturers, and report at the 1932 convention.

#### New Officers for Texas Chapter

The officers recently elected by the Texas Association of Electragists are as follows: Eugene Ashe, Ashe Electric Co., Fort Worth, Tex., president; E. M. Cockrell, Cockrell Electric Co., Dallas, vice-president; E. A. Shotts, Shotts Electric Co., Fort Worth, treasurer, and Herman Brown, Republic Electric Co., Fort Worth, secretary.

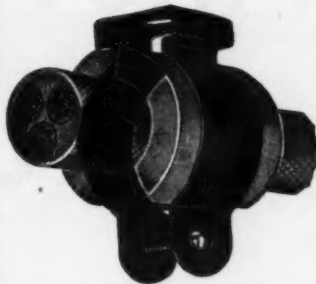
#### Officers of Pacific Coast Inspectors Associations

The following officers were elected at the annual convention of the Southwestern Section, International Association of Electrical Inspectors, held at San Francisco, Calif., September 28 to 30:

Frank Short, electrical engineer, Industrial Accident Commission, Los Angeles, president; Edward M. McLaughlin, electrical inspector, Richmond, Calif., vice-president; Arthur C. Veit, electrical inspector, Alhambra, Calif., second vice-president, and C. W. Mitchell, Board of

## CONTRACTORS!

*You Can Do That Job  
Better With →*



**CABLE AND CONDUIT  
HANGERS**

#### JIFFY CLIPS

No doubt you've been looking for a sturdy clip. Use the Jiffy—light, strong and inexpensive. The Jiffy requires only one bolt or screw to make a secure, neat and careful job.

Accommodates pipe from  $\frac{1}{8}$  to  $1\frac{1}{4}$  inches (pipe measurement).



**JIFFY CLIPS**



**ROUND PUSH**

#### ALTMAN TABLE AND DESK PUSHES (Round)

Push buttons are extras you can sell either over-the-counter or direct to your industrial customers. Here is an attractive round push button that takes up little space—oak, mahogany or walnut to match office furniture. Priced right for quick sale.

#### ALTMAN TABLE AND DESK PUSHES (Rectangular Name Plate)

Attractive—a push your customers will buy—made in sizes from one to nine buttons in either golden oak, mahogany or walnut. Give your customers dependable pushes like the Altman and you'll build business with this line. Get all Altman Table and Desk Pushes from your jobber.



**RECTANGULAR  
PUSH**



#### MINERALLAC INSULATING COMPOUNDS

Minerallac Compounds have that consistency which prevents cracking in cold weather and too free a flow in summer. Weather does not affect this compound.

For use on high voltage lines in cable joints, pot-heads, transformers, etc., up to 33,000 volts.

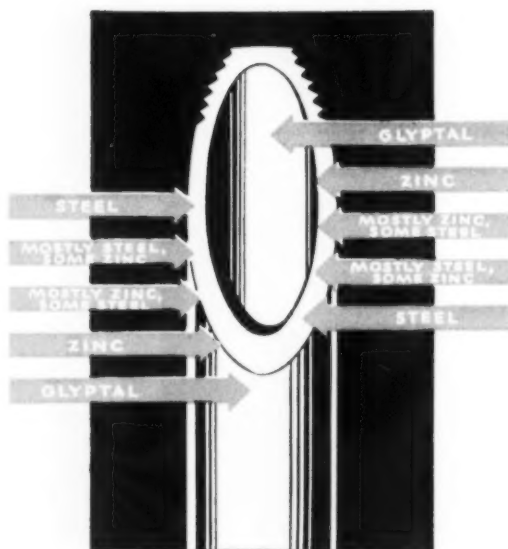
Be safe—use Minerallac Insulating Compounds.

## MINERALLAC ELECTRIC COMPANY

25 No. Peoria St.

Chicago, Ill.

**T  
H  
E  
M  
I  
N  
E  
R  
A  
L  
L  
A  
C  
L  
I  
N  
E**



General Electric has advanced your first line of defense against rust and corrosion on conduit by putting a coating of Glyptal right over the hot-dipped galvanizing on G-E WHITE rigid conduit both inside and out. Now water, oil, acids and alkalis must attack and destroy the Glyptal coating before they can get to the galvanizing. Then they must attack and destroy the galvanizing before they can get to the steel pipe. But they probably will not be able to get that far within the lifetime of the building, for G-E WHITE rigid conduit often outlasts the structure itself.

# GENERAL ELECTRIC

RIGID CONDUIT

MERCHANDISE DEPARTMENT,

GENERAL ELECTRIC COMPANY,

BRIDGEPORT, CONNECTICUT





Besides being so resistant to rust and corrosion, G-E WHITE is made of flexible alloy steel that has remarkable easy-bending qualities. The smaller sizes can actually be bent by hand. This ease of bending reduces trouble and work on the job, prevents breakage on hard bends, and lightens the contractor's work. Its greater workability means greater economy.

Glyptal is a product of the G-E Research Laboratories. It was developed to fill the need for a tough, heat resisting, waterproof material. Moreover, it is resistant to acids, oils and alkalis. Although its cost great-

ly exceeds many other coatings, it is used because G-E engineers considered it the best material for protecting galvanized conduit. Its advantages are not only its superior protection, but also its ability to make wire-pulling easier and to remain glassy-hard under the frictional heat developed.

Only G-E WHITE has the combination of features mentioned here.

Ask your nearest G-E Merchandise Distributor for G-E WHITE rigid conduit, or write to Section C-3212, Merchandise Department, General Electric Company, Bridgeport, Connecticut.

# GENERAL ELECTRIC

RIGID CONDUIT

MERCHANDISE DEPARTMENT,

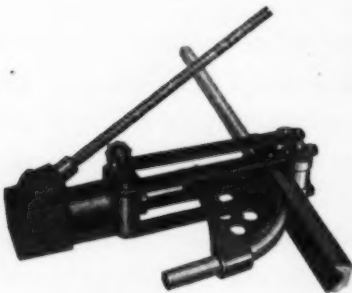
GENERAL ELECTRIC COMPANY,

BRIDGEPORT CONNECTICUT

## Pays for Itself on the First Few Jobs



Greenlee Conduit Benders pay for themselves on the first few jobs in time and money saved. These machines reduce labor hours materially because they bend conduit swiftly and easily, leaving a bend that is round and true. Equipped with attachments for bending both standard and thin-wall steel conduit. Above view shows the bender when fitted for standard conduit. Built in two sizes. No. 770 bends 1 1/4, 1 1/2, 2, 2 1/2, and 3-inch conduit. No. 775 bends, 2 1/2, 3, 3 1/2, 4, and 4 1/2-inch.



Above is the No. 770T with attachments which solve the contractors problem of how to bend thin-wall steel conduit. With the Greenlee, conduit can be bent quickly without crushing, a full 90 degree bend made with one complete forward movement of the power ram. Does away with the purchase of manufactured bends and many fittings and permits easier pulling of wire and cable. Attachments for 1 1/4, 1 1/2, and 2-inch sizes. Write for prices. This machine will make money for you.

GREENLEE TOOL CO.,  
ROCKFORD, ILL.

12-31

Please send complete information on your hydraulic benders with attachments for both standard and thin-wall steel conduit.

Firm.....

Name.....

Street.....

City.....

Name of Jobber.....

Fire Underwriters of the Pacific, San Francisco, secretary-treasurer.

J. A. Casey, electrical inspector, Walla Walla, Wash., was elected president of the Northwestern Section, I.A.E.I., at its annual convention at Salem, Ore.

### Boston League Occupies New Quarters

The Metropolitan Electrical League, Boston, Mass., is now occupying its new headquarters at 182 Fremont St., consisting of reception room, private offices and "work shop."

### Wisconsin to Develop Apprentices

Acting under the Wisconsin State Board of Vocational Education, a series of mass meetings in the electrical contracting industry are being held in the major cities of the state of Wisconsin for the development of electrical apprenticeship and the encouragement of greater use of vocational schools by journeymen and electrical contractors.

The state-wide plan was developed through the aid of the advisory committee for the electrical contracting industry which included representatives from the State Industrial Commission and the Board of Vocational



**MAINTAINS MOTORS IN 8 OUT OF 9 PLANTS IN TOWN:** R. A. Boyce of the Boyce Electric Co., Belvidere, Ill., does general electrical construction work, and in addition maintains the motors and does the electrical work for eight out of the nine plants in town. He went after this business a couple of years ago and by giving good dependable service was able to build it up. He has a complete record of the existing electrical equipment and motors in each plant. This enables him to know what type of repair parts he needs to have handy, and in the event of any breakdown it speeds him up in making the repair because he consults his records and quickly determines what parts he should take along to do the job.



**ERECTS HIS OWN BUILDING:** John F. Gilligan, East St. Louis electrician, is justly proud of this new home, which contains living quarters, office and shop. He is accompanied in this picture by Mrs. Gilligan, who handles the office affairs. This firm concentrates on industrial.

Education, journeymen, electricians and electrical workers. The latter were represented by J. C. Staff of Milwaukee, Davis S. Speaker of Kenosha, A. A. Kaufman, Fond du Lac, and Robert Nickles, Madison.

The apprenticeship development plan is expected to bring the following results:

- (a) The proper number of apprentices needed.
- (b) The careful selection of apprentices.
- (c) The procedure to be followed and the method and practices to be used in training apprentices.
- (d) Uniform and definite recognition as to when apprenticeship ends and journeymanhood starts.
- (e) The elimination of so-called helpers where possible and in all cases from a recognition as future journeymen or masters.
- (f) The elimination of attempted training of apprentices in shops or under conditions which are not favorable to a sound training program.

The objective of the plan is to make better workers in the electrical contracting field and not more workers. It is recommended that applicants for apprenticeship be not over 18 years of age; that they have good health and moral character and have the equivalent of an elementary education through the eighth grade, although junior or senior high-school education is preferred.

Robert J. Nickles, one of the contractor members of the committee, when asked to express an opinion regarding this movement stated:

"It is an agreed fact that for many years our industry has been flooded with contractors and journeymen who have not had a sufficient amount of training to qualify them for entering the industry as heads of businesses.

"We in Wisconsin feel that this situation could be corrected to a great extent by seeing to it that the young men who are entering our business should be a carefully selected group, both from a mechanical as well as an intellectual standpoint. The State Board of Vocational Education has been sold on this viewpoint, and they are working with us toward the end that only worthy young men can take up a training course in electrical work, and only through accredited shops of electrical contractors of recognized standing. This arrangement precludes the possibility of these young men entering industry after only a few months of meagre training in an industrial plant or in a trade school."

#### Kansas May Register Apprentices

For the first time consideration is being given to the electrical mechanics of the future by a State in the proposed license and registration law now being sponsored by the Kansas State Electrical Contractor Dealer Association.

According to the proposed law, the State Examining Board "shall keep on file a record of all apprentices employed by licensed electrical contractors and shall furnish said contractors blank forms for apprentices to fill out, giving their name, age, education, residence and by what elec-



**LONG ASSOCIATION MAKES GOOD TEAM:** On the left is T. White, with J. E. Genevay, partners in the Central Electric Co., Pine Bluff, Ark., which firm they started 12 years ago. However, they have worked together for the past 28 years, mostly with a power company. They concentrate on industrial and maintenance work.

## A New

# YAXLEY

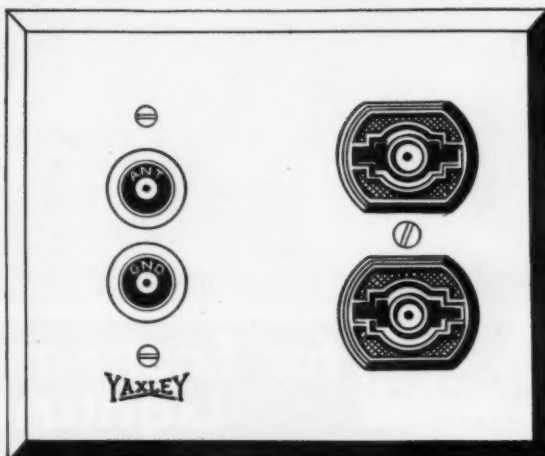
APPROVED RADIO PRODUCTS

## Number

at a  
New  
Low  
Price

No. 256

\$1.50



The new 256 has immediately jumped into favor. It gives you everything you want to do a good job and meet close competition.

This new outlet for aerial and ground and duplex electrical connections is a winner for appearance. But even of greater importance, the aerial and ground receptacles are designed for radio service. With a bakelite cap, they harmonize with the face plate—but are not attached to it. The receptacles are mounted to a strap.

These new type radio receptacles grab the antenna and ground plugs with a bite that assures perfect contact. Antenna and ground plugs are furnished with every No. 256 outlet.

No. 256—Brass .....	\$1.50
No. 256B—Bakelite .....	1.50
*No. A256—Brass, with Outlet Box.....	2.00
*No. A256B—Bakelite, with Outlet Box..	2.00

Your Jobber Can Supply You

## YAXLEY MFG. CO.

1528 WEST ADAMS ST.

CHICAGO

★ ALL YAXLEY RADIO OUTLETS WITH BOXES LISTED AS STANDARD BY UNDERWRITERS' LABORATORIES.



## BELLS and BUZZERS

### ... ALWAYS A LINE THAT MOVES ...



Signal iron box bells—white and black enamel finishes—operate on either batteries or bell ringing transformers—made of drawn steel, furnished with either adjustable or non-adjustable contacts—gong 2½ inches, 3 inches, 4 inches—100 to a standard package.

Combination bell and buzzer with 2½ inch gong lists for \$1.30, for black enamel finish and \$1.40 for white enamel finish.

A complete line of single stroke bells, skeleton bells, vibrating weather-proof bells, guarded gongs and weather-proof buzzers—all backed by Signal's forty years experience in manufacture.

Also Signal Jr. bells and buzzers in gray finish, drawn steel frame, 2½ inch polished gong.

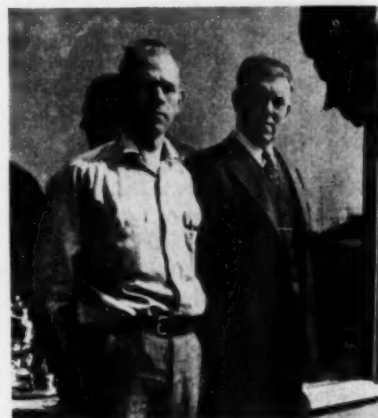
Signal high pitch buzzers is highly recommended for use where a soft yet clear and distinct signal is desired—can be adjusted to any pitch or tone—list price \$1.15.

Signal iron housing bell ringing transformer is a quality product, made for 110 Volt circuit. Type 1a for 50-60 cycles lists for \$1; type OB1 lists for \$1.20. For installations requiring more current, Signal power transformers are made in three sizes—50 watt, 75 watt and 125 watt.

Your jobber can supply you with Signal Bells, Buzzers and Transformers, or write direct to:

**SIGNAL ELECTRIC MFG. CO.**  
Menominee, Michigan

**SIGNAL**  
MANUFACTURERS OF ELECTRICAL EQUIPMENT



#### HAS OWN BUILDING IN CONNECTION WITH ELECTRICAL STORE:—

G. A. Estep, at the right, and his son and partner, L. A. Estep, of G. A. Estep & Son, Yakima, Wash. They own their own building at 717 West Yakima Ave., which contains a well stocked store, with shop in the basement.

trical contractor employed. An apprentice shall be a person employed by a licensed electrical contractor to learn the trade of electrician and shall not install electrical material, wiring or devices except under the direct supervision and direction of a licensed electrician or a licensed electrical contractor."

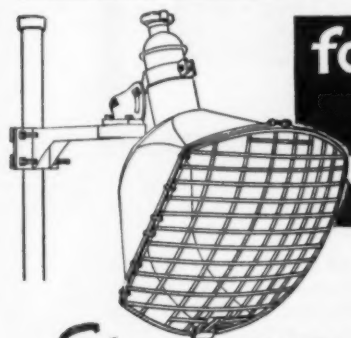
Also, it shall be the duty of the Board "to make provision for and hold a school for apprentices, electricians, and electrical contractors each year for a period of not less than two weeks duration. There shall be no additional fee charged for this school. Instruction shall be given in the application of this law, the requirements of the National Electrical Code, the hazards to life and property of defective electrical wiring, materials and devices."

The purpose of the new law is to register all electrical contractors and workers in the state and provide a license fee for contractors and journeymen.

The bill will come up for hearing at the next session of the legislature.

#### Contractors Join Newly Formed League

The members of the Palm Beach County Chapter of Electragists, West Palm Beach, Fla., have joined the Electric League of Palm Beach County recently formed. A. M. Terry, second vice-president of the local chapter, was elected first vice-president of the league.



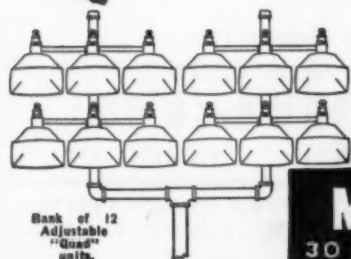
for Economical  
Lighting -  
**QUAD** FLOOD  
LIGHTS



Focusing  
Inner  
Beam  
Projector

No. 24 Heavy Wire Guard for Open-type flood lights. Wire is welded at each intersecting point and finished in Cadmium plate.

Inner Beam Projector builds up lighting intensities at distant points.



Bank of 12  
Adjustable  
"Quad"  
units.

**FLEXIBILITY** is the key note of this up-to-the-minute "Quad" unit. Single, double, or multiple bracket mountings with new "Quad" 1000 watt rectangular reflector. Justly the popular favorite for lighting football fields, skating rinks and all other sport or service areas.

Inner Beam Projector builds up lighting intensities at more distant points.

Use "Quad" catalogue as hand-book of lighting data. Circular describing and illustrating new outdoor lighting equipment on request.

**Quadrangle  
Manufacturing Co.**

30 SO. PEORIA ST. CHICAGO, ILL.

The chapter has also appointed a committee to meet weekly with a committee of the power company, to discuss any complaints that might be received from the contractors. The power company is using association members to do their work, and when an estimate is required on a job, the secretary of the chapter is notified, who selects three members to figure. This plan enables each member in turn to secure a job. By using association members, all work and completion of same is guaranteed by the association.

The members of the association have agreed, at a recent meeting, not to work any more with tools and have secured the support of the local union in this respect. This eliminates a contractor from taking a job so cheap that he has to do the work on it himself at all hours in order to break even.

#### Changes Name

The Independent Associated Electrical Contractor Dealers, Inc., of Greater New York, has changed its name to Independent Electrical Contractors Association of New York, Inc. The present officers are John J. Bauer, president; Albert A. A. Tuna, secretary; A. Lincoln Bush, chairman, and Louis Freund, vice-chairman.

On October 21 a meeting was held in the auditorium of the Westing-



**ENGINEERING SALESMAN FOR MOTOR REPAIR BUSINESS:**—R. S. Osborne, Virginia-Carolina Electrical Works, Norfolk, standing at the right, employs the engineer-salesman-solicitor at the left. In other words, he has a solicitor with engineering experience who works up motor repair business for his firm. We say, salesman, because he also sells fuses when making these calls so that there is usually some profit in every call even though there does not happen to be any motor repair business at the time.



## NOTE THESE THREADS

See how clean and sharp they are! Look also at the depth of threads and the freedom from broken spots and slivers of metal.

This photograph illustrates the threading typical of every length of Fretz-Moon Conduit... threading, which because of the precision and craftsmanship which produce it and the absolute uniformity of the metal in which it is cut, makes fitting easier and faster, and results in a high-class, tight-fitting job.

Three finishes meet every need... ENAMELITE, black enameled; ELECTRO GALVITE, electro-galvanized; and HOT DIPPED GALVITE, galvanized with a protecting coating of pure zinc by the hot dip process... all three with a glass-like enameled inner surface.

**FRETZ-MOON TUBE CO., Inc.**  
Butler, Penna.

# FRETZ-MOON

## RIGID CONDUIT

house Lighting Institute, which has been taken over by the Electrical Association of New York. Ralph Neumiller, managing director of the Electrical Association, spoke on "The Value of the Electrical Institute to the Public."

### To Develop Garage Wiring

As soon as cold weather sets in the Northern States Power Co., Minneapolis, is going to conduct a special garage wiring campaign. Prices have been worked out with electrical contractors whereby a garage will be wired for \$11.95. For an additional \$10, a 3-way switch will be provided for control in the house.

### Ohio Contractors Fight Unapproved Materials

According to C. F. Hammer, secretary-treasurer of the Ohio Electrical Contractors' Association, the Ohio Power Company still intends to continue to urge the use of bare neutral cable in the territory which they serve. The association adopted a resolution at its convention sessions in June to use only approved materials, as was reported in ELECTRICAL CONTRACTING.

Mr. Hammer, in his report, states as follows:

"The question has been brought to



**BUILDS A LARGE INDUSTRIAL BUSINESS IN A FEW YEARS:** K. H. Hill, Hill Electric Co., Memphis, Tenn., bought out another electrical contracting firm eight years ago, which had a machine shop for motor and industrial work. Mr. Hill has added to the equipment and specializes in large and difficult power installations, particularly where special designs are required.

the attention of the writer that this resolution that was adopted by us in convention sessions might be construed as being illegal insofar that it advises the members to refrain from using any materials that are not approved by the National Code. However, it is our desire to continue to urge our members to use only those materials which measure up to definite standards of quality and which have met the approval of the National Electrical Code."

### Newly Organized Brockton Electric Club Makes Progress

The Brockton Electric Club recently formed with membership in Brockton, Mass., and adjacent territory, have started their campaign for cooperative effort and business development, to better conditions of the industry for those in that section.

Over 1800 letters were recently mailed to a selected list telling of the club's interest in securing for the people of this community electrical lighting equipment of merit, to be installed by contractors of recognized ability. In this letter attention was called to the added sales appeal in adequately lighted stores and advantages in general of modernization.

The local light and power company cooperates by placing in the contractor's store a sample of the fixture and employs five special salesmen

who work on a commission basis. Installation work resulting from these sales is turned over to the contractor preferred by the purchaser or if no preference is shown the job is given to the local contractors in alphabetical rotation.

Profits from the sales made are given to the contractor making the installation, and where sales are made directly by him he receives the commission that would have been paid the solicitor. All billing, whether on time or for cash, is handled by the light company and the contractor receives his payment from them.

The officers are: W. E. McCreery, president; Frank R. Lee, first vice-president; W. B. Andrews, second vice-president; E. L. Pearson, secretary-treasurer, and the executive committee is composed of the above and Horace Mann, Oscar H. Allen and William M. Fyffe.

### Association Progresses During 1931

The Cincinnati (Ohio) Electrical Contractors' Association concluded the second year of its existence August 31. Report of Manager J. M. McCarthy reveals that the organization, in spite of the unfavorable business conditions prevailing during the year, has succeeded in carrying on, and has undertaken various proposi-



**FINDS CONTRACTOR-DEALER ARRANGEMENT PROFITABLE:** Tom Flynn of Flynn & Powers is one of Bridgeport's oldest contractors. This firm makes a specialty of wiring public buildings such as schools, Y.M.C.A.'s, municipal buildings, etc. In connection with this a profitable store business is also operated. Mr. Flynn declares that the contractor-dealer now has a better chance to compete with the chain stores due to price adjustments by the manufacturers.



**BELIEVES IN ADEQUATE WIRING FOR NEW HOME:** Clifford Baxter, son of Al Baxter, a contractor of Providence, R. I., is wiring his own new home and, so far, the home has 120 outlets and is not yet completed. In one room Mr. Baxter has placed three clock outlets in order to take care of any emergencies which might arise after the home is completed. He has also placed his refrigerator unit in the basement with remote control in the usual location off the kitchen.





**DOES MILL WIRING:** Arthur A. Drabble of the Star Electric Co., Woonsocket, Mass., does considerable mill wiring, and in one instance this firm saved the mill owner 50 percent of his costs when the plant electrician was replaced by the contractor. In calling on a mill, this contractor with wide experience is often able to make suggestions for modernization and economy that would never be brought to light otherwise.

tions that can be unquestionably termed as progress.

In addition to the regular organization benefits, the association offers a list of personal services to members. In this respect, the collection department was instrumental in collecting several thousands of dollars during the past year for its members. The credit bureau, through credit ratings, revealed information which protected the contractor from bad risks, thereby being responsible for a large saving to the contractor. Free monthly accounting service is at the disposal of the members, being rendered by a firm of accountants, which has been instrumental in bringing before the members the principles of good business. Free legal advice is also given to the members, and free notary service given by the manager. The manager's aid was also given in various ways to assist the individual member, which proved of material benefit to many.

### Want Protection Through Electrical Inspectors

The Washington County (Vt.) Chapter of Electragists are making plans for a state meeting with other Vermont electragist chapters for the purpose of passing a law in the next legislature for protection through electrical inspectors of contracting work.



No. 41 6 AMP.

Here is the new Levolver that opens another field for this famous type of switch.

Because the Standard Levolver was in some instances too thick for use in shallow canopies and such installations, McGill engineers have developed this practical little No. 41, the Thin Model.

Only  $\frac{5}{8}$  of an inch in thickness, yet it possesses all the advantages so valuable to the Levolver type. This 6 amp. switch takes the knock-out smash of cold 500 Watt Lamps.

No. 41 may be had in three stem lengths or with plain lever. Also it may be used as Thin Model Link Switch with chain fixtures.



No. 61

Above is shown the Model No. 61, the Standard Levolver 6 amp. switch. Both the No. 41 and the No. 61 models are mighty practical units.

Write for folder telling about the complete line of Levolver Switches



## Try the Entirely New

HACK SAW BLADE CUTS

BX, WIRE MOLD METAL CABLE, etc.,

*without breaking or ripping out teeth.*

It's the

**-ELECTRICIANS-SPECIAL**



### THE BLADE WITH THE SELF-STARTING TEETH

You'll find this blade a remarkable improvement over the usual type of blade. One stroke, and the fine teeth start the cut instantly. The heavy work is quickly finished with the regular pitch teeth, designed and tempered for electrical work. The Duplex cuts in a clean straight line, exactly on the mark desired, and at any angle. Costs no more than the ordinary blade. Try a dozen.

**MILFLEX  
DUPLEX**  
PATENTED U.S.A.  
**ELECTRICIANS SPECIAL**

Ask your Electrical Wholesaler today or write

**The HENRY G. THOMPSON  
& SON CO.**

Est. 1876

New Haven, Conn.

The members of the Washington County Chapter comprise of two contractors in Barre, Vt., two in Montpelier, one in Northfield and one in Waterbury. They meet once a month, each member taking turns to furnish the place and refreshments.

### Working for Local Licensing Ordinance

The Nassau-Suffolk Electric League, Hempstead, N. Y., is actively engaged in trying to secure a local licensing ordinance in order to raise the standard of electrical work in Nassau and Suffolk Counties, New York. The league has also appointed a committee to analyze the local problems of the contractors in this territory.

### The Future of Illumination

Few, if any, radical improvements can be expected in today's incandescent lamp, even though it has a light-producing efficiency of less than ten percent; other light sources, such as sodium-vapor lamps, must be developed if decidedly increased efficiencies are to be obtained in illuminants of the future, according to L. A. Hawkins, engineer of the General Electric research laboratory, in addressing the members of the Illuminating Engineering Society in Pittsburgh on October 14.

"The sodium-vapor lamp," said Mr. Hawkins, "is the most efficient



**SPECIALISTS IN THEATRE APPARATUS:** Hoffman & Soons, New York City, have found that specialization in electrical work allows them to render expert service that limits competition and makes for profit. Rheostats and special apparatus for motion picture theatres is their specialty. J. C. Soons, one of the members, is shown above.

SOMETHING NEW TO SELL!



## A PROSPECT IN EVERY BUILDING!

You can make a good profit selling this small private telephone system in every medium-sized business house, office, store or public building. Strowger Auto-Com is the simplest system yet devised for dependable, private telephone service. It's needed everywhere!

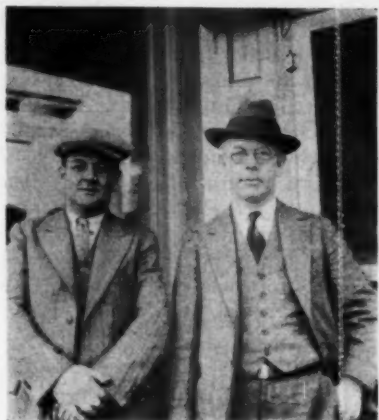
Strowger Auto-Com is easily stocked, installed and maintained. Sales possibilities are unlimited for an energetic, progressive contractor. And you need not be a "telephone" man to sell it. It is so simple in operation that every prospect can understand it—and value its time-saving convenience in his own building.

Remember that Strowger Auto-Com is not new or untried. It is built by the originator of the dial telephone. Be the first and only Strowger Auto-Com dealer in your territory. Write for full details today! Automatic Electric Inc., 1033 W. Van Buren Street, Chicago, Illinois.

**Strowger  
Auto-Com**

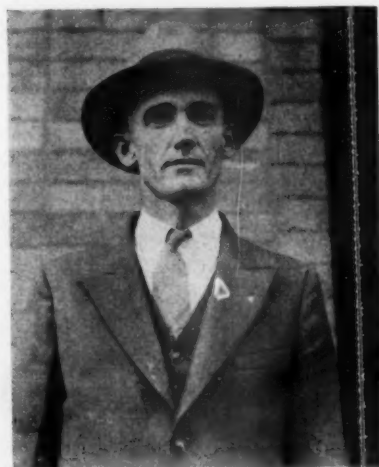
Private Telephone System Made by the Makers of Strowger P-A-X

**STROWGER AUTOMATIC  
DIAL SYSTEMS**



**CONTRACTORS INCORPORATE:** H. N. Davis and H. B. Chase of the Davis-Chase Electric Co., Brockton, Mass., recently incorporated their business. This old established firm does a general contracting business but of late has been giving more attention to remodeling, repairs and the sale of appliances.

artificial light source, approaching a practical device, which has yet been produced; but much work remains to be done before an adequate commercial life is to be had, for sodium has the mean habit of attacking ordinary glass. Good progress has been made in the production of sodium-resisting glass, and some day the sodium lamp, because of its high efficiency, several times that of the Mazda lamp, and in spite of its rather unpleasant characteristic color (yellow) is likely to be used, alone or in combination with other lamps for color correction, where high luminous efficiency is the main desideratum."



**MAKES UNUSUAL RESIDENCE INSTALLATION:** Lenn Liles, Memphis (Tenn.) contractor, will be busy far into the winter wiring the King residence, one of the finest homes built in the South. It will have 42 rooms and 12 baths with a total of 82 electrical circuits.

## FRINK POLARALITE SIGNS



Frink Polaralite Sign installation for the Northwestern Light & Power Company's office in the Public Service Building, Portland, Ore.

Polaralite Signs have been installed all through this building. Those shown in the picture are made with special clamps to slip over the marble ledge. Polaralite Signs are sheets of plate glass with any desired lettering or design etched thereon and lighted at one edge. This causes the design or lettering to stand out as though the letters were suspended in space. Complete details on request.

**THE FRINK CORPORATION**  
23-10 BRIDGE PLAZA SOUTH, LONG ISLAND CITY, N. Y.





## GETS REMODELING JOBS

**Y**OUR big sales chance comes when tenants demand new electrical outlets for telephones, desk lights, buzzers, and dozens of other electrical appliances. Talk Conduo-Base to building managers who are up against such demands and you talk yourself right into a nice job. Offer to replace the old baseboards with Conduo-Base, and run the base receptacle circuits and low tension wires in its two fireproof raceways, and presto! He can give his tenants convenience outlets where or when they may wish. Write for details.

*Licensed Manufacturers*  
**Dahlstrom Metallic Door Co.**  
 Jamestown, N. Y.

**Knapp Bros. Mfg. Co.**  
 Chicago, Ill.

**United Metal Products Co.**  
 Canton, Ohio

**CONDUO-BASE..** FOR CONVENIENCE  
 OUTLETS

### OAMCO UTILITY FLOODLIGHT FOR 100 WATT LAMP



No. 1108

An efficient weatherproof floodlight designed for general and decorative lighting.

Porcelain enamel, inside and out, with heat resisting lens. Equipped with cast iron base for vertical or horizontal mounting, an adjustable bracket, and cord and plug.

List price \$6.50.

Write for bulletin No. 82 for more details.

**OVERBAGH & AYRES MFG. CO.**

413 South Clinton Street  
 CHICAGO, ILLINOIS

### South Bend Licenses Dealers

South Bend, Ind., is the latest city to join the ranks of places requiring an electrical dealer license. The new code, which has just been printed through the cooperation of the local electrical contractors, provides that only approved electrical devices may be sold and these only through licensed dealers in electrical materials. The fee for such license is \$5.00 with a \$5.00 renewal.

### Denver Reduces Wages

The General Contractors Association of Denver, Colo., and the unions of the Building Trades Council have agreed that the members of the latter organization accept a 12½ percent wage reduction. This 12½ percent wage reduction for journeymen-members means a reduction in pay from \$11 to \$9.62½ for an 8-hour day.

### Red Seal Homes Increase in Buffalo

Due to intensive work on the part of the members of the Electrical League of the Niagara Frontier, 52 percent of the homes built in Buffalo, N. Y., during September were Red Seal. The total percentage of Red Seal homes completed from January 1 to September 30 is 37 percent.



**WORKED ON 52-VOLT CIRCUITS:** A. P. Belliveau, Woonsocket, Mass., has been in the contracting business since way back when 52-volt circuits were standard. That he appreciated the value of advertising is seen by the outside of his place of business. In addition to signs on each side of the entrance, he has utilized the stairs for one word signs telling of the type of work he does.



## A ROLL O' TAPE

*Electrical flash-  
es gathered  
among the Big  
Wire-and-Pipe  
Men by*

Coit A. (Duke) Smith  
and Walter Holmes

Field Editors, ELECTRICAL CONTRACTING

K. H. Hill, Hill Electric Co., Memphis, Tenn., did a nice job of both selling and designing recently. He got wind of a company which wanted better equipment for picking up nails, iron and other pieces of metal from the highways for the benefit of motorists. Hill designed and made a set of special magnets to be attached to a truck for trial. The outfit proved so successful that he received additional orders for a quantity and the total to be made will be around a hundred.

FRED LAUBE, the electrical department store contractor-dealer of Rochester, N. Y., has moved into his new building and from all reports it is the last word in modern convenience and attractiveness. Trucks, for instance, are loaded in the basement where the stockroom is located and then run up in a special truck elevator. And besides there is a special enclosed parking space for customers.

WHO is the oldest electrical contractor in years of service in the largest county in the largest state of the Union? The answer is Murphy Johnson, Alpine, Brewster County, Texas.

QUALITY and not price has been the experience of Preston and Bishop of Holyoke, Mass. This firm sells a better grade of batteries and at a higher price than the chain stores, yet customers requested batteries at the lower price. Finally they stocked a battery at the same price as the chain people, but when this cheaper battery was offered, the customer invariably refused it and purchased the better grade.

WHAT with price cutting, depression and other things, some contractors are inclined to get blue at times. Take a little lesson then from W. M. Good, of Good & Dennison, Salem, Ore., one of the most cheerful men in the business, and who with his partner keeps busy all of the time. And yet, for over 15 years, Mr. Good's total eyesight has been equivalent to only 15 per cent of one eye. He cannot read, and cannot see to use tools—does practically everything by feel. But he is able to do any kind of wiring work,

# ...IT PAYS!



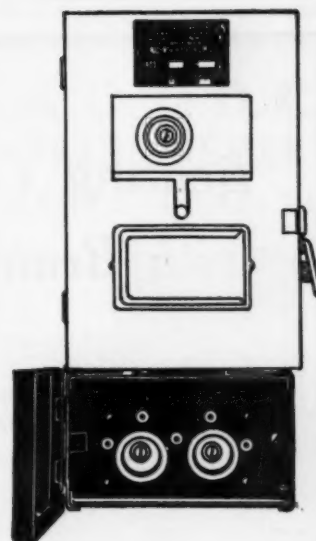
Enclosed Panelboard  
Catalog No. 16 BN

**To Use  
Wadsworth  
Enclosed  
Branch Circuit  
Cutouts  
and  
Panelboards  
Surface Mounting  
Type**

The illustration on the right shows the Surface Type—Enclosed Branch Circuit Cutouts attached to a WADSWORTH Meter Service Switch.

Wadsworth provides not only a Simple, Quick and Time-Saving method of attaching Cabinet to Switch, but also assures a Neat—Safe and satisfactory installation.

Catalog No. 100-A giving complete information gladly mailed on request.

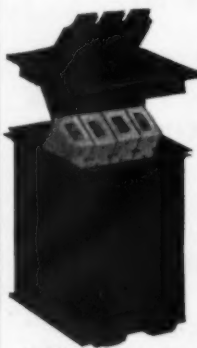


**Try them on your next Job**

**The WADSWORTH ELECTRIC MFG. CO. INC.**  
Covington, Kentucky

## Lighting For Contractors

*By a Manufacturer Who Understands Your Problems*



In order that the finest possible lighting effects may be secured for any building, we maintain a completely equipped lighting demonstration

studio at our factory.

Here—with the hearty cooperation of our corps of experienced lighting engineers—a

complete program of lighting effects can be worked out, and Hub equipment specially designed to produce every desired lighting effect.

You are cordially invited to make free use of all of our facilities as it fits your convenience. The complete facilities of our capable organization are yours to command.

**—FREE—**

Comprehensive Lighting Handbook just published. We will be glad to send it to you.

## HUB ELECTRIC COMPANY

Complete Electric Lighting Equipment

Factory and General Offices:

2219-2225 West Grand Avenue, Chicago  
Telephone Seeley 6440-1-2-3

Branch Offices:

New York, Toledo,  
Milwaukee, Minneapolis

## Beating Competition with Brains

Competition is tough in the electrical contracting business these days; and every day it gets worse. Successful contractors have found they can beat fly-by-night competition best by using their brains, and by educating their responsible employees. You can help your head men to keep abreast of the times and save you money by sending each his own copy of **ELECTRICAL CONTRACTING**.

though some operations are a little slower for him than others, so he and his partner divide the work to the best advantage. He says, however, that the dimness of his sight has its advantages. Where other fellows go into a dark attic or basement and fuss around with candles, he goes in and works just as well without a light as he could with one.

C. P. HAWES, New Bedford, Mass., contractor-dealer, tells me that people who think rationally about the need for occasional repairs and adjustment on vacuum cleaners, radios, washing machines for some reason have the delusion that an electric refrigerator should operate for a life time without attention. Hawes is trying to educate the public that a refrigerator is after all only a mechanical device that like an automobile should receive occasional attention and be replaced when improved models appear.

WILLIAM A. RITT of St. Peter, Minn., says he has no trouble selling against price. His competitor on a recent installation submitted the following estimate: "We will wire your house for \$180 installing three No. 6 service wires and a 60 amp. safety switch, service wires to be run in conduit of suitable size." Ritt, on the other hand, submitted four pages of detailed specifications showing what the job would do for the customer and quoting \$318. He got the job.

IT'S such a simple little thing, hardly seems worth mentioning, yet an eastern inspector tells me that many fixture boxes are not mounted on a solid support. As a result every time the fixture is turned on from a pull chain the lath and plaster are strained. After a while there is a crack in the plaster about the fixture.

CLYDE Cannady of Central Electric Co., Memphis, Tenn., a polo player with the 115th Field Artillery, T. N. G., proved that polo could be played at night on a lighted football grid. By using the smaller space employed by indoor polo, the cost is not excessive and as the game is becoming more and more popular, it will be another chance for outdoor sport lighting installations in the city.

DURING Fire Prevention Week in October C. S. Graham, chief electrical inspector of Jacksonville, Fla., spoke on the subject of "The Fire Hazard of Defective Electrical Wiring and Equipment" over Station WJAX. Among other things, he said: "Do not attempt to do your own electrical work or make unauthorized additions or attachments, without the necessary training and experience, and do not employ unlicensed and incompetent 'electrical bootleggers' to do it for you." Wouldn't it be a fine thing if electrical inspectors in other cities could be persuaded to talk in the same vein over the radio?



R. L. Horvill, wiring and radio salesman for the Electric Construction Co., Little Rock, Ark., recently did a neat piece of selling which proved the value of finding out what is in the customer's mind when a sale hangs fire. A man wanted to buy a fine floor lamp, but seemingly couldn't be closed. Horvill finally dug out the reason, which was that the prospect lacked a good place to plug it in. He then sold the man on having a convenience outlet and other wiring installed and ended up by selling him two floor lamps instead of one.

HERE'S a hot one! A Portland, Ore., home had a fire as the aftermath of a bomb explosion. The newspapers attributed the fire to "defective wiring damaged by the explosion."

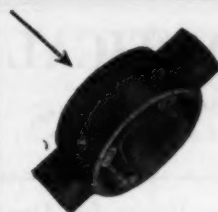
THE E. O. Dorsch Electric Co., St. Louis, Mo., not only makes a special layout blueprint for each important job but does it in a way that makes interpretation by foremen and mechanics very easy. Nothing but the electrical work is shown on these layouts and Mr. Dorsch uses his own symbols along with the standard ones. Also the runs and outlets are shown very clearly and notations are added which leave nothing in doubt.

LELAND Martin, Delmar, N. Y., handed in 4 Red Seal applications on September 20, the largest number to be handed in on one day this year by one contractor in that locality. Also every new home which Mr. Martin has wired has been Red Seal.

A. BONAHER, general superintendent of S. J. O'Brien, Inc., New York, never asks his men to do a job he wouldn't do himself, and not always that much. One of his friends tells me that he climbed a church spire 300 ft. in the air one winter day when he had to chip ice with a hatchet as he went along. This was done in making a survey on a flood lighting job.

WHEN a post office is erected in a town of 20,000, the local contractors are usually swamped with outside competition. El Dorado, Ark., is no exception, but when the scramble for the wiring of that town's new home for the mail was over, Ira Pockrus, Eldorado Plumbing and Electric Co., had the contract tucked away. He will install a modern system of lighting.

C. O. McCrory Electric Co., Memphis, Tenn., has had his share of large work and school installations, but has also made a specialty of residences in the better class. He has men who thoroughly understand the fine points of wiring high-priced homes and has made complete installations in nearly 200 houses, ranging from classy bungalows to mansions. In some suburban districts his jobs are in groups of a dozen or more.

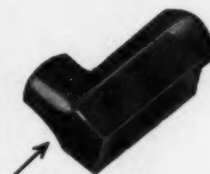


#### ADAPTIBOXES

Threaded fittings whose outlets can be quickly changed in size, type and direction—on the job—to suit changes or extensions.

#### ADAPTILETS

Regular Solid Fittings with accurate clean-out threads and smooth interiors. Fine for most ordinary runs.



NEW YORK  
A. Stone  
112 East 23rd St.

BOSTON, MASS.  
Jas. H. Healey Co.  
120 Pearl St.

## Keeping "Modernized" Means "Keeping at It"

MODERNIZING your plant's lighting and power wiring isn't such a big trouble, after all—if you "keep after it" day by day. You'll be surprised, too, how easily the jobs get done when ADAPTi Conduit Fittings are helping you.



#### THREADLESS ADAPTILETS

Well-finished, arm-gripping fittings which assure perfect grounding, and which stay tight.

#### VAPORPROOFS

Using these instead of ordinary fittings even where it isn't actually "wet" will often save lots of "trouble-shooting" later.



## Write for Descriptive Bulletins

The ADAPTi Co.

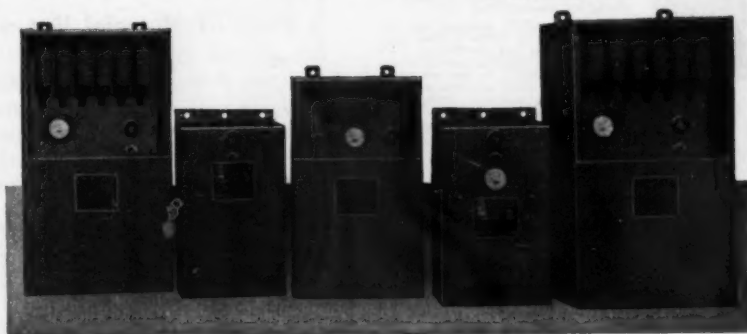
2996 East 72nd St.,  
Cleveland, O.

CHICAGO  
United El. Sales Co.  
300 W. Adams St.  
PHILADELPHIA  
Craven El. Sales Co.  
30 Bank St.

## FIRST IN THE FIELD—MORE IN SERVICE

# NATSCO A.C. to D.C. TRANSFORMERS

## WILL SOLVE YOUR BATTERY PROBLEM



FURNISHES PURE D. C. FOR TALKING—OR 74% PURE FOR COILS FROM THE A. C. LIGHT SOCKET SOURCE.

Made in All Sizes—6 Volts to 115 Volts

Ideal Power Supply for Telephones, Public Address, Sound on Film, Clocks, Dynamic Speakers, Relays, Etc.

NATIONAL TIME & SIGNAL CORPORATION  
DETROIT, MICHIGAN EIGHTEEN BRANCHES



## A BIG MONEY SAVER

Eliminates triple handling—unwinding—measuring and rewinding wire, thus saving time and money. Manually operated—reels wire into neat coil, automatically counting and registering number of feet. Strongly built of heavy selected materials so as to last a lifetime.

### It Pays for Itself

Send for bulletin  
Write us or your jobber



**Minneapolis Electric  
and Construction Co.**

88 S. 12th St.  
Minneapolis Minn.

## SHERMAN MAKES BETTER CLIPS FUSE CLIPS



To secure perfect results in panel board and cut-out installations, carefully made fuse clips are absolutely essential—"Carefully made"—that's the Sherman line.

They're carefully designed and accurately made to insure perfect electrical efficiency and durability. Ferrous types are made of special Phosphor Bronze which is the only non-ferrous metal which will retain spring temper under tension. Knife blade types are of heavy special temper spring copper—give perfect contact.

### BATTERY CLIPS

- 1 One Piece Whole  
Clip carries current;  
No heating; Long lived.
- 2 Handy Terminal.  
Easy to attach  
by screw or solder;  
ears grip installation.
- 3 Safety hand  
grip. Exclusive  
feature, prevents accidents at all times.
- 4 Hot lead coated. Resists acid spray; completely sealed in flexible lead coating.
- 5 Universal Jaws. Grips any type conductors or binding posts. Never lets go.

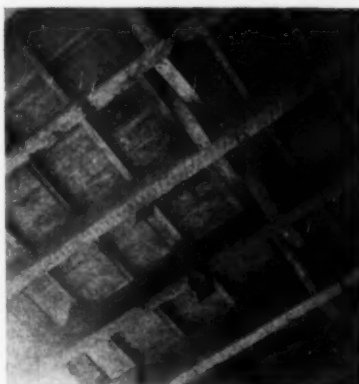


**H. B. SHERMAN MFG. CO.**  
BATTLE CREEK, MICH.

## PRACTICAL METHODS

### Presetting Boxes for Drop Ceilings

The Whiffen Electric Co., White Plains, N. Y., installs outlets before the drop ceiling is put in place thereby saving the work of nipping them



NO NIPPLING DOWN NECESSARY.

down after the ceiling was up. Short pieces of board are nailed to the ceiling beams with their ends at the proper level. Across these a perforated bar hanger is nailed and the outlet box bolted thereto. In this way the outlets are held firmly in place while the metal lath contractor does his work.

### A Fleet of Material Boxes

Because the Taylor Electric Co., Pine Bluff, Ark., has a constant flow of orders for repair wiring, small extensions and jobs which require varying quantities of staple material, Mr. Taylor sought an efficient and



A BOX FOR EVERY TRIP

## Subscribers

You can't afford  
to miss a single  
issue.

Give us your  
new address if  
you have  
moved.

**Lowest Prices**  
on **NATIONALLY ADVERTISED RADIO and ELECTRICAL GOODS**

**Get it first**

**Paramount Salesman**

**LIGHTING FIXTURES and ELECTRICAL MATERIAL**  
APPLIANCES  
RADIO SETS  
AND SUPPLIES  
WHOLESALE ONLY

**FREE!**

*Write for this Book*

**PARAMOUNT**  
ELECTRICAL SUPPLY COMPANY  
(WHOLESALE ONLY)  
606 W. ADAMS ST. CHICAGO

## When Things Go Wrong -ELECTRICALLY-

Use the Practical  
**POCKET-TESTER**

**Test-  
-Late**

Pat. Oct. 21 '29  
No. 1,778,883

**DETECTS  
FAULTS**

In Light and Motor Circuits,  
Spark Plugs, Household  
Appliances

Tests Any Voltage Between  
100 and 550 A. C. or D. C.—No  
Switches Required

L. S. BRACH MFG. CORP.  
NEWARK, N. J. TORONTO, CAN.

\$1.50

## ARMSTRONG BROS. Chain Pipe Vise

An improved chain vise of  
patented design. Light,  
compact, strong, it fits in  
tool bag, attaches to any  
post or bench. Has large  
capacity.



### Will Not Bend Conduit

One piece drop forged steel jaw fully supports conduit, prevents bending under the chain. Better made, of better materials.



Write for  
Catalog  
P-10

ARMSTRONG BROS. TOOL CO.  
"The Tool Holder People"  
341 N. Francisco Ave. CHICAGO, U.S.A.

inexpensive set of carriers which would allow each mechanic to start out in a hurry and yet be properly equipped.

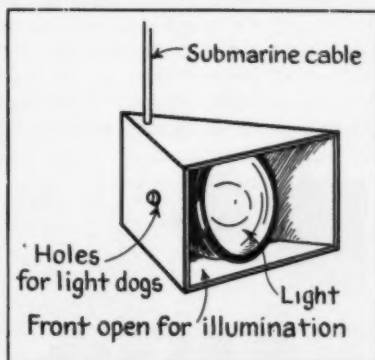
Each man sent to a job has his list of material and can put his hand on everything wanted instantly. The next step was for him to be able to grab the right container for transportation. The answer is the set of boxes shown in the illustration, although only about half the entire number are present and accounted for.

Each box is plainly marked on both sides with the company name. This was done to avoid confusion when some of the boxes are used on larger jobs with other trades, where the mechanics wish to split up the material and work on different floors and rooms.

The box on top of the pile is marked with a hospital cross because it is for emergency repairs and must not be used for other purposes.

### Floodlighting an Old Swimming Pool

G. W. Davis, Roanoke, Pa., recently wired an outdoor swimming pool that was built before floodlighting was known. To avoid drilling through concrete he built triangular boxes for the lights and sunk them



in each corner of the pool. Holes were drilled in the sides of the boxes and the dogs of the lights were set in the holes. The face of the boxes were of course open to permit illumination.

Submarine cable in each corner led to the lights. If repairs become necessary the entire outfit is pulled to the surface. The height of the boxes was roughly about half the depth of the pool. At the shallow end where the water was 3 ft. deep the boxes were 18 in. high.

## Ansonia Weatherproof Bells



No. 622 Battery Type  
No. 624 Transformer Type

**ANSONIA**  
Weatherproof Bells

embrace a new improved method of construction which permits the keeping of the armature in the magnetic field up to the moment of striking the gong, utilizing fully and efficiently the electrical energy applied, thereby producing a maximum blow.

The cast iron cover is fitted on a substantial cast iron base with a rubber gasket.

These bells are produced only in the non-guarded type with gongs ranging from five inch to twelve inch supplied in both battery (No. 622) and transformer (No. 624) types. The No. 624 transformer type can be furnished with conduit fittings.



*Every  
Electrical  
Contractor  
should have  
this catalog*

**The ANSONIA**  
Electrical  
Company  
Ansonia, Conn.

ANNUNCIATORS • BELLS • BUZZERS  
PUSH BUTTONS • WIRE



## DAY-BRITE REFLECTORS

for  
**STORES**



No. 85

No. 85—Unwired unit, length 8 1/4 inches; drawn of brass, hinge porcelain socket. Standard finish, statuary bronze plated. For T-10 tubular lamp



No. 95

No. 95—Unwired unit, length 9 inches; made of brass, porcelain socket. Standard finish, statuary bronze plated. For Standard lamp to 60 watts

**BANKS**



No. 1012

No. 1012—Standard 18-inch reflector with diffusing glass bottom, made of brass or steel, with steel porcelain enameled reflector and twin porcelain sockets. For Standard lamp to 40 watts



No. 2000

No. 2000—Thin model sign for clear plate glass; outer frame, drawn bronze moulding; porcelain socket, intermediate base for T-8 1/2 lamp. Any standard finish.

**SCHOOLS**



No. 130

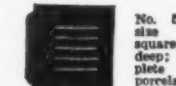
No. 130—Bracket light—length 9 inches; made of brass; porcelain socket, for T-10 tubular lamp. Standard round canopies and stems.



No. 720

No. 720—Picture reflector—length 9 inches; made of steel; porcelain socket for T-10 tubular lamp. Standard finish, gold spray.

**BUILDINGS**



No. 8050

intermediate base socket used for S-11 lamp.



No. 5000

resisting. Sockets, twin porcelain for two lamps of 100 watts each.

DAY-BRITE COMPANY  
3825 Laclede Ave., Saint Louis

### Book Review

Electrical Equipment (second edition)—Harold W. Brown, B.S., M.M.E., Cornell University, Ithaca, N. Y. Published by McGraw-Hill Book Co., New York (\$5.00).

Since the first edition of "Electrical Equipment" was published so many new improvements and additions have been made in the electrical industry that a second edition became necessary. This book has been greatly enlarged upon in order that it may not only be used as a textbook for electrical engineering students (as the first one was), but also for practical use after leaving college. The subject of electric heating and welding has been added, the material on relays has been expanded and the cost data have been extended to include many kinds of electrical equipment and are applied to many of the problems. The important subjects covered are circuits and switchboards, d.c. and a.c. motors, transformers, illumination, a.c. and d.c. transmission and distribution, a.c. and d.c. generators and motor applications. The book is completely illustrated.

### Definition of Rigid Conduit Requested

The Rigid Conduit Section of NEMA has taken an action requesting that an appropriate definition be developed for rigid conduit. It is also suggested that this definition be submitted for inclusion in the definitions of the National Electrical Code as well as other glossaries.



**POWER WORK AND MOTOR REPAIRS SOLICITED BY SALESMEN:** The Electric Maintenance Service Co., Bridgeport, Conn., employs three salesmen to solicit power work and motor repairs. A line of V-belts and pulleys are also sold. From left to right, in the photo above, are A. W. Peterson, E. B. Burr, C. J. Grinn and W. W. Burr.

Buy from your jobber



Only  
**KLEINS** are  
good enough

In the electrical field, "since 1857" Klein Pliers have been the standard. Side-Cutting or Long Nose, Oblique-Cutting or Duck Bill—just the Pliers you want for every job.

Mathias **KLEIN** & Sons  
3200 BELMONT AVE., CHICAGO

TRADE PAINE MARK



**PAINE  
SECTIONAL SWITCH  
BOXES**

Conduit, BX, Loom, Romex  
Galvanized—Enameled

**BIG TIME SAVERS**

Easily Gangable

Clean Knockouts

**EXCEPTIONALLY  
LOW PRICES**

Sample on request

**ASK YOUR JOBBER OR  
WRITE FOR PRICES**

**THE PAINE COMPANY**

2945 Carroll Ave.  
79 Barclay St.

Chicago, Ill.  
New York City

# Manufacturers News

*A department for the announcement of activities of manufacturers that are of interest to contractors, such as changes in executive personnel, branch offices, new products, etc.*

## Martin Wolf Enters New Field

Martin J. Wolf, formerly with Beardslee Chandelier Mfg. Co., Chicago, has opened offices at 400 W. Madison St., Chicago, as "Marketing Adviser" in the electrical, radio and automotive fields. The work consists of product, price level, program and follow-through and specialized service relating to moving more goods to, or through, present outlets in these three fields. This applies to lines already established and to lines to be introduced in these fields.

## James L. Holland

James L. Holland, former vice-president of Dossert & Co., New York City, died on October 19, 1931.

## A Plan to Sell More Wiring Devices

To promote the sale of additional wiring in the home, The Arrow, Hart & Hegeman Electric Co., Hartford, Conn., has developed a plan to help the electrical contractor increase his volume in this class of wiring.

This plan is based upon the idea that the show parts of the job are the wiring devices and if devices of a kind that have a ready sales appeal are brought to the attention of the prospects sales for additional wiring will develop.

Six such devices—a noiseless tumbler switch, moisture-proof duplex receptacle, radio receptacle, combination bulls-eye and receptacle, combination bulls-eye and switch, and combination switch and receptacle—have been mounted on a display board which is made available to contractors at a nominal price. In addition, the company is providing an 8-page booklet for the purpose of helping contractors show customers what some of the latest devices in the wiring field are.

The company is planning to work with the contractors to develop the sale of additional wiring under this plan, the complete details of which are contained in a booklet entitled "A Practical Plan for the Electrical Contractor."

## Anaconda Promotes Brower and Otis

Anaconda Wire & Cable Co., New York City, announces the promotion of F. W. Brower as manager of rubber wire sales and H. N. Otis as sales promotion manager.

## Signal Electric Appoints Representatives

Four new direct factory representatives have been appointed by the Signal Electric Mfg. Co., Menominee, Mich., as follows:

Handel-Davies Company, Cleveland, Ohio; P. M. Day & Company, Detroit, Mich.; Scott-Jacqua, Inc., Indianapolis, Ind., and W. C. Laing, Cincinnati, Ohio.

These representatives will carry a complete stock of Signal products for immediate delivery in their respective territories.

H. W. Kilkenny, formerly of the Ohio Brass Co., and J. G. Kilkenny, his brother, will represent the Central Tube Co., Pittsburgh, the W. N. Matthews Corp., St. Louis, and the Maloney Transformer Co., St. Louis, in the Cleveland and Ohio districts.

Harvey Hubbell, Inc., Bridgeport, Conn., has disposed of its interest in the Electric Heater Corporation, effective November 6. The Electric Heater Corporation will continue manufacturing instantaneous and tank type heaters under a new management.

# 15

## Improvements in the New "Reliance"

GUARANTEED

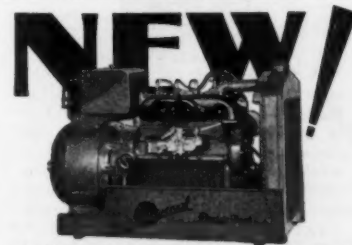


GUARANTEED

For 22 years the Reliance has been the standard of quality. With these latest improvements it is a step ahead. Constructed throughout of best materials skillfully put together to insure perfect operation. Turns current ON and OFF for 8 days with one winding. Types to fill all requirements.

## Reliance Automatic Lighting Co. Racine Wisconsin

Also manufacturers of the famous ACE and Racine Time Switches.



Smallest, most compact, 4 cyl. electric Plant

## EMERGENCY LIGHTING

Hospitals, hotels, theatres and many types of public buildings are requiring the installation of individual Electric Plants for emergency service.

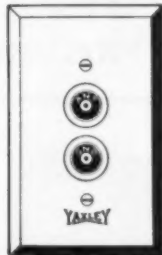
Contracts like this represent good, profitable business for you. Go after it. With the proven dependability of Universal—you can guarantee 100% satisfactory service. With the specialized background we have established in this field—we can provide you with expert technical data to clinch the sale for any type of industrial, commercial or marine installation. The Universal Line ranges from 1 to 35 K.W.—AC and DC—32, 110 or 220 volts.

Address your inquiry to Dept. 310



Write, and we shall be glad to give you full information about the profitable opportunities that exist in this growing electrical field.

## New Electrical Products



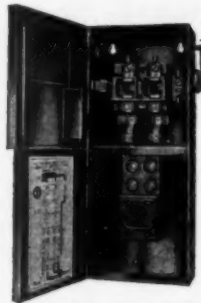
A radio convenience outlet for aerial and ground connections is announced by Yaxley Mfg. Co., Chicago. Unit consists of two jacks mounted on a strap separate from cover which serves as a face plate only. Strap has plaster ears. Two plugs for attaching aerial and ground wires of the set are also provided. No. 156 unit has brass face plate and No. 156-B has Bakelite face plate.



A vaporproof unit for 25 to 60-watt lamps is announced by Wheeler Reflector Co., Boston, Mass. Unit is available with frosted or opal globes, and with polished aluminum, white duco finish or chromium-plated brass canopies. Complete unit consists of canopy, pigtail socket and globe, and is designed for lighting shower baths, locker rooms, swimming pools, marquees, theatre dressing rooms, corridors and hospitals.



The Wadsworth Electric Mfg. Co., Covington, Ky., announce show case lighting units designed so that reflected light rays are retained within show case. Reflector contacts the housing at four points only, providing three distinct air spaces. A split socket feature exposing front connected easily accessible screws makes it possible to loop wires from one socket to another and eliminates the necessity of socket leads and the soldering and taping of joints in reflector housing. The top half of socket being placed on bottom half is interlocked by sliding it in position under socket and reflector supports and metal reflector locks socket securely.



The Trumbull Electric Co., Plainville, Conn., announces the addition to its line of a combination range and entrance switch with branch circuit cutouts, furnished in accessible or sealable main fuse types. Entire device is in one box having two sections, each section with separate cover. Upper section contains a fusible main switch, 3 pole, 2 blades, 2 fuses and a neutral terminal, and the lower section, a 2 pole, 60 amp. dead-fuse puller and either 2, 4 or 6 branch cutouts.



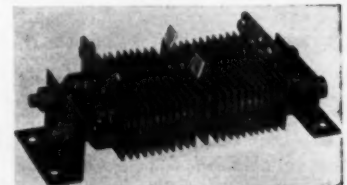
"Red Seal" No. 162 armored cable connector is announced by American Circular Loom Co., New York City. This fitting which holds armored cable in a box, requires no locknuts. Connector is held rigidly by inserting connector through knockout and tightening screw. The die-formed steel barrel clamp compresses with a fraction of the manual effort required to collapse a casting.



The "AE" renewable fuse is announced by Associated Engineers Co., Chicago. The design of this fuse eliminates the use of nuts, bolts and washers as a means of making link and terminal contact. Link is formed to fit on a rigid asbestos carrier, positive link and terminal contact being made by terminal pin abutment. It is claimed by manufacturers that because of reduced length of renewable link and abutment contact, the "AE" fuse will operate with coolness and with dependable "time-lag."



General Electric Co., Schenectady, N. Y., announces a spring clamp of non-magnetic steel with body of clamp so shaped that it will distribute contact pressure, independent of spring action of the bolting lugs. This is for use on buses and similar connections where this method of joining conductors can be used. An expansion washer is also announced for use on bolted connection placed under the head and nut of bolt. The washer measures 1½ in. in diameter and proportioned to give full tension up to elastic limit of regular ½ in. steel bolt.



B-L Electric Mfg. Co., St. Louis, Mo., announces a high voltage rectifier occupying a space of 7¼x2¼x2¼ in., giving a continuous output rating of 75 watts, operating directly from the 115 volt a.c. line. It is claimed by the manufacturer to be the largest continuous rating of dry metallic rectifier for a given space.



A rubber attachment cap with handgrip is announced by Cutler-Hammer, Inc., Milwaukee, Wis. Cap has blades fastened to a bakelite disc imbedded in rubber base with a narrow handgrip, approximately 1¼ in. long. Unit is rated at 15 amp. 125 volts, 10 amp. 250 volts, and is known as Catalog 7761. It is available with cord openings for ½ and ¾ in. cords.



**MARTIN**

**Portable  
Vise Stand  
and  
Pipe Bender**



Made in  
Two Sizes  
—small stand  
with chain vise  
2 in. cap.; with  
hinged vise 3½  
in. capacity...  
Large stand  
with chain vise  
4 in. cap.; with  
hinged vise 4½  
in. capacity.

Do away with that  
make-shift bench  
... Carry the  
MARTIN with you  
anywhere... A gen-  
uine time saver for  
putting and thread-  
ing pipe or conduit  
up to 2½ in. (hold on  
approval). Write  
today.

**H. P. MARTIN & SONS**  
Owensboro, Ky.

**For Quick Accurate Hole Cutting**

**Adjustable  
Jiffy Cutter**




Cuts perfect round  
holes from ¼" to 6"  
in diameter quickly  
and easily in sheet  
metal iron or steel  
up to ¼" in thick-  
ness.

**Box Cutter**  
No manual pressure necessary, spring  
exerts the pressure.  
Ask for information on complete line.

**PAUL W. KOCH & CO.**  
20 N. WACKER DRIVE CHICAGO  
Established 1915

**A Dependable  
Tool**



Write us or your jobber

**M. & M. MFG. CO.**  
Box 696 Enid, Okla.

**Keep Up-to-Date**

By reading these pages you will  
acquaint yourself with what is  
newest and best in electrical  
supplies and equipment.  
When communicating with an  
advertiser mention

**Electrical Contracting**

### LeNoir Joins Allen-Bradley

Eugene F. LeNoir, formerly president and general sales manager of the Union Electric Manufacturing Co., Milwaukee, Wis., has become associated with the Allen-Bradley Co., Milwaukee. Mr. LeNoir, a prominent figure in the motor-control field, was for eleven years active in the manufacture of master drums, motor starters and other control equipment. In his new capacity Mr. LeNoir will contact with the motor manufacturers through the Allen-Bradley district offices and agents, as a special representative.

On September 21, 1931, the Code Electric Products Corporation, 1341 Glenwood Ave., Philadelphia, was formed, with Morgan J. Lewis as president. This company was formerly Morgan J. Lewis of Philadelphia.

A new bulletin entitled "Lighting Winter Sports," No. GEA-1340, has just been published by General Electric Co., Schenectady, N. Y.

The Dayton Rubber Mfg. Co., Dayton, Ohio, has just published catalog No. 105 covering Dayton cog-belt drives. This catalog contains photographs of typical installations of drives, price-lists, weights and dimensions. Also, general details of pulley construction and calculation data for special non-stock drives.

American Circular Loom Co., New York City, has just issued a four-page folder on Xduct and Electroduct made from spellerized and scale-free pipe.

A hand-book containing complete engineering data and prices on fractional horse-power Dayton V-belt drives has been published by The Dayton Rubber Mfg. Co., Dayton, Ohio.

General Electric Co., Schenectady, N. Y., has published GEA-940B, superseding GEA-940A, covering switchboard devices, panel and bench-board pipe fittings.

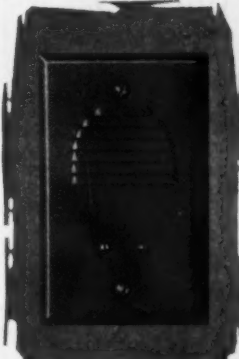
**What—  
no protection  
on the threads!**

That is true about  
some conduit, but NOT  
about "GALVADUCT."

Here is the reason.  
Every length of "GAL-  
VIADUCT" is THREAD-  
ED FIRST—then electro-  
galvanized. That makes  
protection from end to  
end.

**GARLAND  
Mfg. Company**  
Pittsburgh, Penna.

**Here  
it  
is!**



**Buzzer  
Mounted  
on Switch  
Plate**

**Perfect  
in design**

The No. 410 Buzzer mounted on Switch Plate is an improvement on other types now on the market. Supreme appearance with new sturdy mechanism at low cost. Try it!

You should know more about the

**LIBERTY LINE**  
Clip and Mail Now

THE LIBERTY BELL MFG. CO.  
Minerva, Ohio.

Gentlemen: Send me catalog on complete  
Liberty Bell line of transformers, bells,  
buzzers and burglar alarms.

NAME.....  
ADDRESS.....  
CITY.....STATE.....



**SX  
SHEATHED CABLE**

Here  
are two  
Alphaduct  
products  
that  
are proven  
profit  
builders  
for  
electrical  
contractors

Specify **ALPHADUCT** to  
your jobber's salesman

**ALPHADUCT CO.**

136 Cator Ave.  
Jersey City, N. J.



**ALPHADUCT  
LOOM**

## Index to Advertisers

A	
Adam Electric Co., Frank.....	43
Adapti Co., The.....	91
Alphaduct Co. ....	98
Anaconda Wire & Cable Co.....	6
Ansonia Electrical Co., The.....	93
Appleton Electric Co.....	50
Armstrong Bros. Tool Co.....	93
Arrow Electric Division.....	56
Automatic Electric Inc.....	86

B	
Brach Mfg. Corp., L. S.....	93
Bull Dog Electric Products Co....	
.....Back Cover	
Bussmann Mfg. Co..Inside Back Cover	

C	
Century Electric Co.....	44
Conduo-Base Co. ....	88
Crescent Ins. Wire and Cable Co... 57	
Cutler-Hammer, Inc. ....	37, 74

D	
Day-Brite Reflector Co.....	94

F	
Fretz-Moon Tube Co., Inc.....	83
Frink Corp., The.....	87

G	
Garland Mfg. Co.....	97
General Electric Co.....	
.....34, 42, 58, 59, 67, 78, 79	
Graybar Electric Co.....	36
Greenlee Tool Co.....	80

H	
Hart & Hegeman Division.....	45
Henderson-Hazel Corp. ....	66
Hub Electric Co.....	90

J	
Jefferson Electric Co. ....	23

K	
Klein & Sons, Mathias.....	94
Koch & Co., Paul W.....	97

L	
Liberty Bell Mfg. Co., Inc., The....	97

M	
M. & M. Mfg. Co.....	97
Martin & Sons, H. P.....	97
McGill Mfg. Co.....	85

McGraw-Hill Book Co., Inc.....	64, 100
Minerallac Electric Co.....	77
Minneapolis Electric & Construction Co. ....	92

N	
National Electric Products Corp..2, 3, 4	
National Time & Signal Corp.....	91

O	
Overbagh & Ayers Mfg. Co.....	88

P	
Paine Co., The.....	94
Paramount Electrical Supply Co....	92
Pittsburgh Reflector Co.....	99

Q	
Quadrangle Mfg. Co.....	82

R	
Reliance Automatic Lighting Co....	95

S	
Sangamo Electric Co.....Front Cover	
Sherman Mfg. Co., H. B.....	92
Signal Electric Mfg. Co.....	82
Steel City Electric Co., The.....	65

T	
Thompson & Son Co., The Henry G.	86
Triplex Products Corp.....	26
Trumbull Electric Mfg. Co., The..	51

U	
Underfloor Duct .....	4
Universal Motor Co.....	95

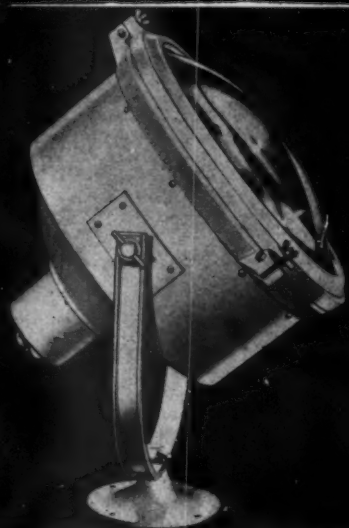
V	
Van Cleef Bros.....	75

W	
Wadsworth Electric Mfg. Co., Inc., The .....	89
Wagner Electric Corp.....	35

Y	
Yaxley Mfg. Co.....	81
Youngstown Sheet & Tube Co., The .....	Inside Front Cover

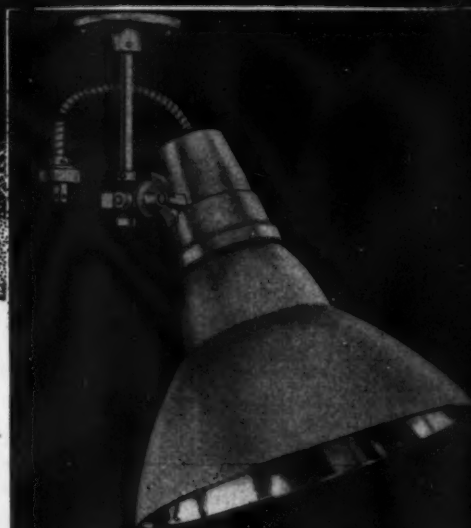
# Indirect Lighting

## Flood Lighting



Floodlight No. FLC 501—One of a wide variety of Permaflexor units for white and color flood-lighting.

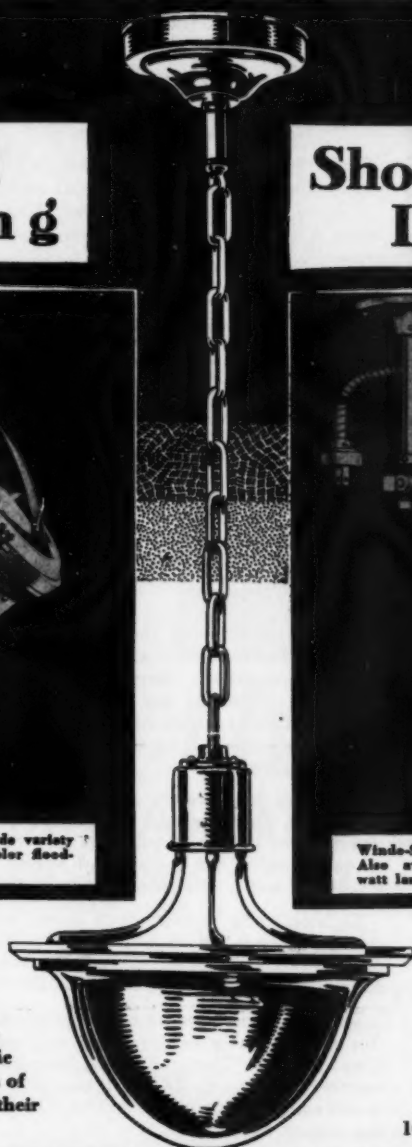
## Show Window Lighting



Windo-Spot No. 500 for 300-500 watt lamp. Also available—Windo-Spot No. 200 for 200 watt lamp and No. 100 for 100 watt.

### TWENTY YEARS

of specialization in show window lighting, flood lighting, indirect, cove, and other forms of illumination have established the scientific value of Permaflexors. Fifteen years of practically perfect service insure their permanence.



### AT LEFT:

Luminaire No. B-5. A low priced, attractive and most effective indirect lighting unit for 500 watt lamp. Smooth, even distribution of light. List price only \$14.50. Also B-2 for 200 watt and B-10 for 100 watt.

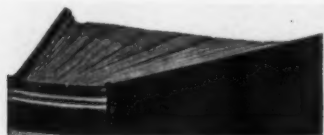
**PITTSBURGH REFLECTOR COMPANY** 304 ROSS STREET  
PITTSBURGH, PA.

# Permaflexor

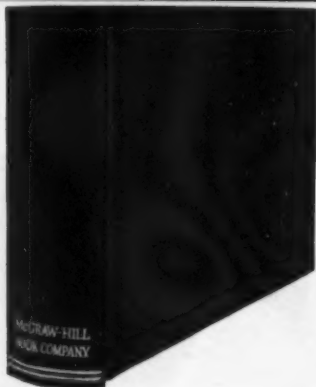
## LIGHTING

THE SILVERED GLASS REFLECTORS WITH  
THE *Permanent* REFLECTING SURFACE





**JUST  
PUBLISHED!**



GLANCE over the section headings listed below. These are only the main general headings. Under each, all of the many practical divisions of the work are covered. No matter what the job is, it's in this handbook, covered from the standpoint of theory, principles, equipment, methods, standards and specifications, testing, inspecting, repairing.

1. Electricity as a Source of Power
2. Electrical Wiring Devices and Methods
3. House-wiring Installations
4. Wiring in Public Buildings
5. Outdoor Installations
6. Industrial Installations
7. Testing
8. Inspection and Maintenance
9. Estimating Electrical Work
10. Handy Tables

Special attention is given to methods of estimating, reading plans and diagrams, classifying equipment, getting costs of material, labor, etc., with everything made clear by practical examples, sample forms, useful tables, etc. The contractor will also be interested in the valuable helps on electrical advertising practice.

Beside the standard indoor and outdoor installations, many such up-to-date topics as radio circuits, electric heat applications, wiring of gas-driven vehicles, electrical equipment used in aviation, etc., are covered in satisfyingly detailed form.

**See it for 10 days FREE  
Send the coupon**

**The most important  
McGRAW-HILL Book for  
practical electrical workers  
in ten years!**

Only rarely are we privileged to offer to any industry so thorough, so up-to-date, so helpful a manual as this. When such a book is published it enjoys long life, as a growing body of men use it and spread the word that it gives the practical help they need in the handy, compact form they like.

## **Handbook of Industrial Electricity**

by **MAX KUSHLAN,**  
*Electrical Engineer*

**525 pages, 4½ x 7, over 600 illustrations, diagrams  
and tables, flexible, \$4.00**

THE Handbook of Industrial Electricity has been organized and prepared by a master electrical worker—a man who for twenty years has handled the practical details, large and small, of design, construction, testing, and estimating, in power and industrial installations of many kinds. Where his writings have appeared in print before, the data and methods described have often been accepted as standard by leading contracting, manufacturing and utility companies.

The book is expressly planned as a reference book for electricians actively engaged in installing and maintaining electrical equipment in residential, commercial and industrial buildings and outdoors. It answers literally hundreds of questions on the methods of wiring, inspecting, and maintaining lighting, machinery and power installations of all kinds.

Technical and mathematical terms are either avoided or, where used, are clearly defined and illustrated by practical examples. Standard practice is demonstrated by liberal reference to accepted rules and specifications, by over 500 illustrations and diagrams and 118 practical tables.

Space does not permit a really full and adequate description of this book. But we will gladly send a copy for 10 days' free examination on receipt of the coupon below. Then, after you have had an opportunity to look it over thoroughly, send us only \$4 in full payment, or return the book if you think it isn't worth many times that amount to you. At least see this helpful new book. Send the coupon now.

### **McGRAW-HILL FREE EXAMINATION COUPON**

McGraw-Hill Book Co., Inc., 330 West 42nd St., New York, N. Y.

Send me Kushlan's Hand Book of Industrial Electricity, \$4.00, postpaid for 10 days' free examination. I will return the book in 10 days or remit for it then.

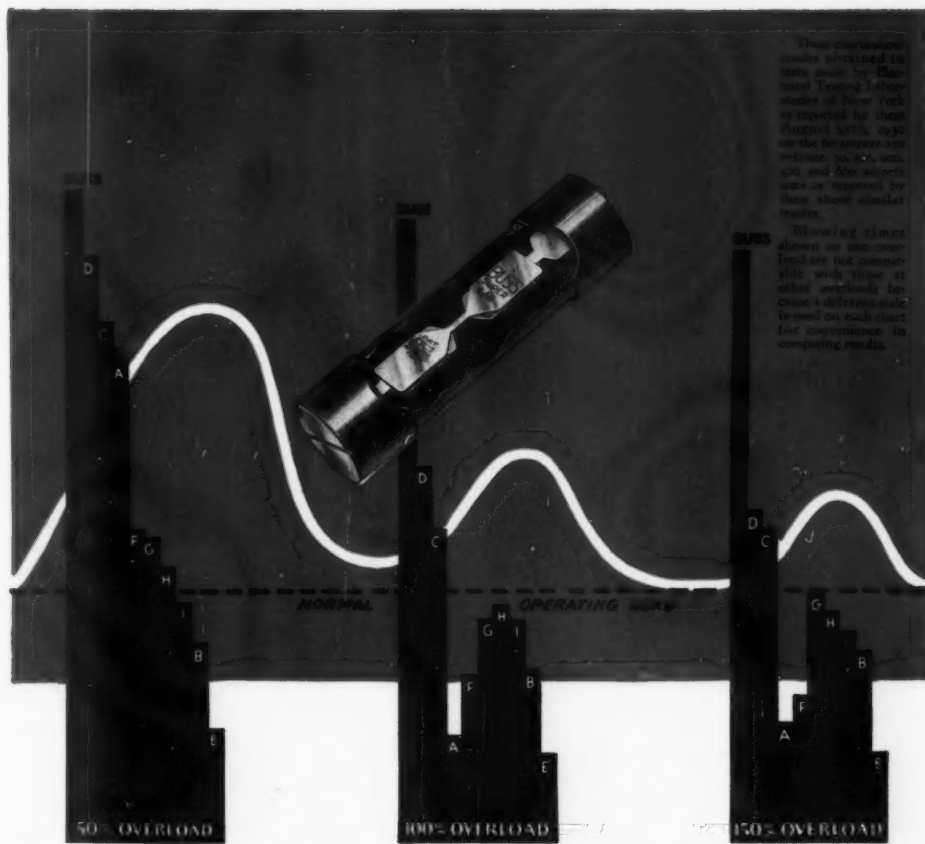
Name .....

Address .....

City and State .....

Position .....

Company ..... E. C. 12-31



# REDUCE *the* WAGES YOU PAY TO HARMLESS OVERLOADS

**I**f you are looking for places to **SLASH COSTS**—if you want to “stop leaks” and increase operating efficiency—why not “cut the overhead salary” you pay to harmless overloads that are the cause of many needless shutdowns.

You can't get away from temporary or harmless current surges—but **TODAY** you can prevent many of the **COSTLY SHUTDOWNS** often caused by them by using a **MODERN FUSE** that will “hold” where others fail.

Just glance at the chart—see for yourself how the **NEW BUSS SUPER-LAG Renewable FUSE** compares with old-fashion fuses. Here at last is a fuse that will blow **SAFELY** to protect equipment—yet has a time-lag long enough to carry many of those harmless overloads heretofore so difficult to combat.

Why continue to “pay wages to harmless overloads” that cripple production and wreck operating efficiency? Why not use a fuse that will help you keep machines running—lights glowing—workers busy—and overhead costs to a minimum.

## Start Cost Cutting Right at Your Desk

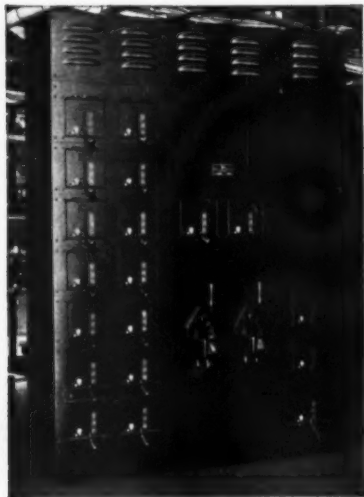
Why not do the simple and practical thing and give this modern fuse a trial throughout your plant. Even the first cost is no more than most old-fashion fuses. At the end of the year check up and see how operating efficiency has been increased, and fuse bills have been reduced. If you would like to know more about **BUSS SUPER-LAG Fuses** before ordering them from your distributor, complete information will be sent by mail or we will have a representative call, whichever you prefer.

**THE** **BUSSMANN MANUFACTURING CO., St. Louis, Mo.** **FUSE**  
A Division of the McGraw Electric Company

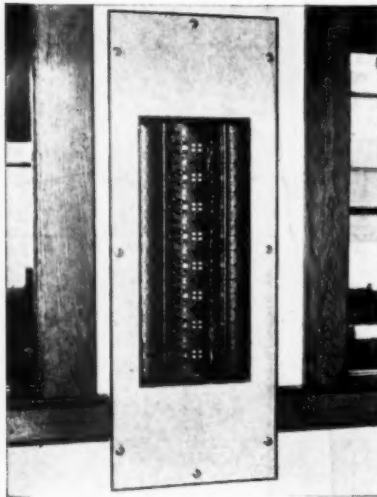
# BUSS SUPER-LAG

# CONTRACTORS!

THE *Bull Dog* QUALITY LINE MAKES  
MORE SATISFIED CUSTOMERS AND GREATER  
PROFITS FOR YOU!



Bull Dog SAFtoSWITCH-BOARD incorporates Ball-Bearing Switches



Bull Dog Superba Lighting Panel—Special SurFlush Type



Bull Dog Safety Switch used in a leading industrial plant



Bull Dog's ability to constantly design and introduce new and improved electric products is evidence of energetic leadership.

In the keen competition of the day such ability and such leadership are essential to successful selling.

And it naturally follows that the contractor who bases his estimates on and later installs the quality products of leadership—meets less sales resistance on the one hand and makes more satisfied customers on the other.

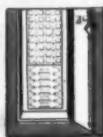
**BULL DOG ELECTRIC PRODUCTS COMPANY**  
DETROIT, MICHIGAN

In Canada: Bull Dog Electric Products of Canada, Limited, Toronto, Ont.

**OVER 25 YEARS OF RESEARCH AND DEVELOPMENT**



**SUPERBA**  
Lighting Panel



**SAFtoFUSE**  
Feeder Panel



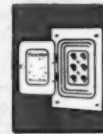
**SAFETY SWITCH**



**Bus-DUCT**



**Trol-e-DUCT**



**FUSENTER**



**SAFtoSWITCH-BOARD**



